

# **Split System Heat Pumps**

Split System Heat Pumps 7 1/2 through 20 Ton - 50 Hz

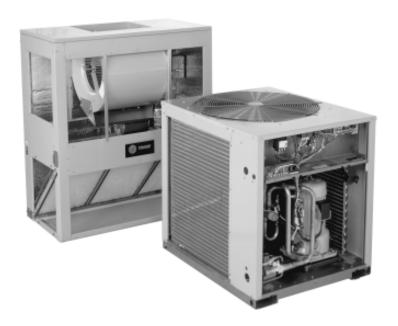
Air Handlers 5 through 20 Ton - 50 Hz





### Introduction

# THE BEST VALUE SM



#### Split System Heat Pumps... Designed With Your Needs In Mind.

The Trane reputation for quality and reliability is reflected in the Odyssey™ Commercial Split System Heat Pumps. Trane's focused attention on the split system marketplace results in an outstanding heat pump that meets job requirements...and at a very competitive price.

Efficiency, flexibility and installation ease, coupled with Trane's reputation for quality and reliability, gives you a system that is "Simply the Best Value".

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# Features and Benefits

#### **Heat Pumps**

- 3-D® Scroll compressors
- ModelTWA155-200B have dual compressors with independent refrigerant circuits
- Compressor motor overload protection
- Control transformer
- High and low pressure cut-out switches
- Internal pressure relief valve
- Liquid line filter drier, factory installed
- Holding charge of dry nitrogen
- Copper tube, aluminum plate fin coils
- Low ambient cooling to 35° F (1.7° C) as manufactured
- · Weather resistant baked enamel finish
- Heavy gauge steel cabinet
- Mounting/lifting rails under base

### All condensing units offer these optional accessories:

- Head Pressure Control Low Ambient Cooling To 0° F (-17.8° C)
- Coil Guards Kits
- Isolators both Rubber-in-Shear and SpringType
- Anti-Short-Cycle Kit
- Time Delay Relay

#### **Air Handlers**

- Low voltage terminal board
- Expansion valve(s)
- Convertible
- PVC double-sloped, removeable drain pan
- Fan relay
- Efficient evaporator coil
- · Baked enamel finish
- · Filter access panel
- 1" (25.4 mm) throwaway filters standard with provisions for field supplied 2" (50.8 mm) filters
- · Adjustable belt drive motor
- Single point power entry to electric heaters
- Refrigerant piping and/or electrical connections provided from either side

# Odyssey<sup>™</sup> air handler versatility is further increased by a complete line of optional accessories designed to match and easy to install:

- Discharge Plenum and Grille
- Return Grille
- Subbase
- Electric Heaters
- High Static Evaporator Motor
- Isolators both Rubber-in-Shear and SpringType





# Features and Benefits

#### **Heat Pump Options**

The Odyssey™ split system product line includes heat pumps in both single and dual compressor options.

TWA075A and TWA100A single compressor models feature single refrigeration circuitry lowering job installation costs by requiring only one set of refrigerant lines. These units are ideal for either the low cost, new construction jobs as well as renovation and replacement buildings.

In addition, Odyssey modelsTWA155B throughTWA200B are dual compressor units that give true standby protection; if one compressor fails, the second will automatically start-up. Also, the first compressor can be serviced without shutting down the unit since refrigerant circuits are independent.

Dual compressors are not just for protection, they also save energy costs. Most buildings are designed for the peak load requirements yet the building usually operates at less than peak load. During light load conditions only one compressor functions to maintain the space comfort thus reducing the need for energy.

#### **Low Ambient Cooling Operation**

Each condensing unit can operate to 35° F (1.7° C) as standard. An accessory Head Pressure Control gives you the capability to operate to 0° F (-17.8° C). All condensing units offer these accessories:

- Head Pressure Control
- Coil Guard Kits
- Isolators both Rubber-in-Shear and SpringType
- Anti-Short-Cycle Kit
- Time Delay Relay

Trane split systems have been specified in thousands of applications and you'll find Odyssey will win you even more jobs with it's smaller, more manageable cabinet.

#### Air Handlers Offer More Flexibility

Flexibility is a key to meeting changing market requirements. Odyssey split systems offer various compressor options and convertible air handlers. The air handlers can be installed either vertically in a mechanical room or horizontally above a ceiling. And it doesn't require any removal of panels or reconfiguration of the drain pan to make either airflow application work. All the air handlers feature factory installed belt drive and ball bearing evaporator fans with adjustable sheaves for maximum airflow performance. The standard motor on the TWE 100A air handler will deliver 4000 cfm (1888 l/s) at 0.8" (20.32 mm) ESP. Plus oversized motors are available for higher static applications.

Odyssey air handler versatility is further increased by a complete line of accessories designed to match and install smoothly:

- Discharge Plenum and Grille
- Return Grille
- Subbase
- Electric Heaters
- High Static Evaporator Motor
- Isolators both Rubber-in-Shear and SpringType
- A Full Line of Thermostats

Odyssey™ — A Complete Split System
Odyssey delivers the flexibility to select a
complete system that meets your
particular job requirements. Air Handlers
are designed, tested and rated with
condensing units to let you select the
proper match between capacity and
load. Condensing units can also be
matched with Trane built-up air handlers.
These matched systems can be quickly
engineered for specific applications.





# **Application Considerations**

Application of this product should be within the catalogued airflow and performance considerations. The System Selection Program will simulate product performance for a set of given conditions. It is recommended that the program should be run at the lowest outdoor ambient and supply air flow rates requiring cooling or heating operation for a particular unit. For more information on the System Selection Program contact your local Trane Representative.

#### Clearance Requirements

The recommended clearances identified with unit dimensions should be maintained to assure adequate serviceability, maximum capacity and peak operating efficiency. Actual clearances that appear inadequate

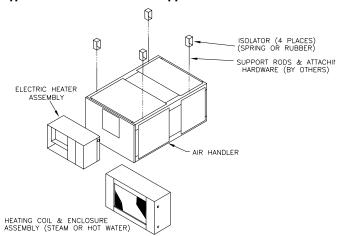
should be reviewed with the local Trane Representative.

#### **Low Ambient Cooling**

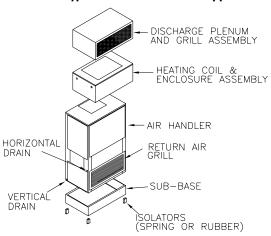
As manufactured, these units can operate to 35° F (1.7° C) in the cooling mode of operation. An accessory head

pressure control will allow operation to 0° F (-17.8° C) outdoor ambient. When using these units with control systems such as bypass changeover Variable Air Volume, consider the requirement for a head pressure control to allow low ambient cooling.

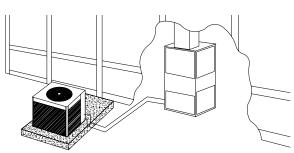
#### **Typical Horizontal Air Handler Application**



#### Typical Vertical Air Handler Application



#### Typical Split System Application





# Selection Procedure

#### **Cooling Capacity**

Step 1 — Calculate the building's total and sensible cooling loads at design conditions. Use the Trane calculation form or any other standard accepted method.

**Step 2** — Size the equipment using Table PD-1. Match the cooling loads at design conditions.

Example: The following are the building cooling requirements

а

Electrical Characteristics: 380-415/50/3

b

Summer Design Conditions: Entering Evaporator Coil: 80 DB/67 WB (27 DB/19 WB° C)

Outdoor Ambient: 95° F (35° C)

Total Cooling Load: 75 MBh (22kW)

d

Sensible Cooling Load: 53 MBh (15.5 kW)

е

Airflow: 2500 cfm (1,180 l/s) External Static Pressure: 0.77 in. (19.6 mm) w.g. (193 Pa)

Table PD-1 shows that aTWA075A matched with aTWE075A has a gross cooling capacity of 82.4 MBh (24.1 kW) and 59.5 MBh (17.4 kW) sensible capacity at 95 DB (35° C) ambient and 2500 cfm (1180 l/s) and 80 DB/67 WB (27 DB/19 WB) air entering the evaporator.

To find the net cooling capacities, fan motor heat must be subtracted. Determine the total unit static pressure:

External Static 0.77 in

(19.6 mm) (193 Pa) Standard Filter 0.10 in 1 in. (25.4 mm) (2.5 mm) (25 Pa) Supplementary Electric Heat 0.23 in

(5.8 mm) (57 Pa) Total Static Pressure 1.10 in

(27.9 mm) (275 Pa) Note: The Evaporator Fan Performance Table has included the effect of a 1 in. (25.4 mm) filter already. Therefore, the actualTotal Static Pressure is 1.10 - 0.10 = 1.00 in. (279 - 2.5 = 25.4 mm) (275 - 25 = 250 Pa)

With 2500 cfm (1180 l/s) and 1.00 inches (250 Pa) (0.8 kW), Table 26-1 shows a 1.07 Bhp.

Note: The formula below the table can be used to calculate Fan Motor Heat, Constant x Motor Power =

Fan Motor Heat

 $3.5 \times Bhp = MBh$  $3.5 \times 1.07 = 3.75 MBh$ 

 $1.375 \times (kW) = kW$  $1.375 \times 0.8 = 1.1 \text{ kW}$ 

NetTotal Cooling Capacity = 79.6 MBh - 3.75 = 75.85 MBh = 23.3 kW - 1.1 = 22.2 kW Net Sensible Cooling Capacity = 57.1 MBh - 3.75 = 53.35 MBh = 16.7 MBh - 1.1 = 15.6 kW

#### **Heating Capacity**

**Step 1** — Calculate the building heating load using the Trane calculation form or any other standard accepted method.

**Step 2** — Size the equipment using Table PD-9 to match the heating loads at design conditions. The following are building heating requirements:

а

Total Heating Load: 110 MBh (32.2 kW)

b

Outdoor Ambient (Winter): 17° F (-8.3° C) DB

C

Indoor Return Temperature: 70° F (21.1° C) DB

d

Airflow: 2500 cfm (1180 l/s)

Table PD-9 indicates the mechanical heating portion of the heat pump will provide 37.5 MBh (11.0 kW) for the winter design conditions.

Step 3 — Because 37.5 MBh (11.0 kW) is less than the building's required heating capacity, a supplementary heater must be selected. 110 - 37.5 = 72.5 MBh (32.2 - 11.0 = 21.2 kW) minimum heater capacity.

From Table PD-25, the 24.22 kW heater has a capacity of 82,670 Btuh. From Table 34-1, the 24.22 kW heater at 400V indicates the heater model number is BAYHTRL435A. This heater will be adequate to cover the residual heat capacity needed for the application.

#### Air Delivery Selection

External static pressure drop through the air distribution system has been calculated to be 0.77 inches (19.6 mm) of water gauge. From Table PD-24 static pressure drop through the electric heater is 0.12 inches (3.0 mm) of water (0.77 + 0.12 = .89 in.) (19.6 + 3.0 = 22.6 mm). EnterTable PD-15 forTWE090A4 at 2500 cfm (1180 l/s) and .90 static pressure. The standard motor at 790 rpm will give the desired airflow.



# Model Number Description

#### **Split System Heat Pump Model Nomenclature**

Т	W	Α	(	0	7	5	Α	D	0	0	D	Α
1	2	3	_	4	5	6	7	8	9	10	11	12

#### Digits 1, 2, 3 - Product Type

TWA = Split System Heat Pump

# Digits 4, 5, 6 - Nominal Gross Cooling Capacity (MBh)

075 = 75 100 = 100 155 = 155 200 = 200

#### Digit 7- Major Development Sequence

A = Single Compressor B = Dual Compressor

#### Digit 8 - Electrical Characteristics

D = 380-415/3/50

#### Digit 9, 10 - Factory - Installed Options

00 = Packed Stock 0S = Black Epoxy Coated Coil

#### Digit 11- Minor Design Sequence

D = Fourth

#### Digit 12- Service Digit

A = First

#### **Air Handler Model Nomenclature**

Т	W	E	0	5	0	Α	D	0	0	С	Α
1	2	3	4	5	6	7	8	9	10	11	12

#### Digits 1, 2, 3 - Product Type

TWE = Cooling Convertible

### Digits 4, 5, 6 - Nominal Gross Cooling Capacity (MBh)

#### Digit 7- Refrigerant Circuit

A = Single B = Dual

#### Digit 8 - Electrical Characteristics

D = 380-415/3/50

#### Digit 9, 10 - Factory - Installed Options

00 = Packed Stock

#### Digit 11- Minor Design Sequence

C = Third

#### Digit 12- Service Digit

A = First



### General **Data**

# (Heat Pumps)

Table GD-1 — General Data — Heat Pumps

	TWA075A	TWA100A
Cooling Performance <sup>1</sup>		
Gross Cooling Capacity, BTUH (KW)		
Matched Air Handler, BTUH (KW)	82,000 (23.97)	109,000 (31.97)
Heat Pump Only <sup>2</sup> , BTUH (KW)	82,000 (23.97)	105,000 (30.75)
ARI Net Cooling Capacity <sup>3</sup>	80,000 (23.35)	105,000 (30.75)
System Power KW	7.36	10.32
Heat Pump Only Power KW	6.61	9.22
Heating Performance		
ARI Heating with Matched Air Handler		
HighTemperature Capacity, BTUH (KW)	75,000 (21.82)	106,000 (31.05)
LowTemperature Capacity, BTUH (KW)	47,000 (13.84)	69,000 (20.29)
Compressor		
Number	1	1
Туре	3D®Scroll	3D®Scroll
No. Speeds	1	1
No. Motors	1	1
Motor HP (KW)	6.25 (4.7)	8.33 (6.21)
Motor RPM	2875	2875
ARI Sound Rating (Bels) <sup>4</sup>	8.8	8.8
System Data <sup>5</sup>		
No. Refrigerant Circuits	1	1
Suction Line, in. (mm) OD	1.375 (34.9)	1.375 (34.9)
Liquid Line, in. (mm) OD	0.500 (12.7)	0.500 (12.7)
Outdoor Coil - Type	Plate Fin	Plate Fin
Tube Size, in. (mm) OD	0.375 (9.5)	0.375 (9.5)
Face Area, sq. ft. (m²)	19.2 (1.78)	24.0 (2.23)
Rows	2	2
Fins Per Inch (Fins per mm)	18 (457)	18 (457)
Outdoor Fan Type	Propeller	Propeller
No. Used	1	1
Diameter, in. (mm)	26.00 (660.4)	28.00 (711)
DriveType	Direct	Direct
No. Speeds	1	1
CFM <sup>6</sup> , (L/S)	4700 (2218.2)	6700 (3161.7)
No. Motors	1	1
Motor HP (KW)	0.33 (.24)	0.75 (.56)
Motor RPM	925	925
R-22 Refrigerant Charge, Lbs <sup>7</sup> (Kg)	18.0 (8.16)	24.25 (11.0)

- 1. Cooling Performance is rated at 95° F (35° C) ambient, 80° F (26.7° C) entering dry bulb, 67° F (19.4° C) entering wet bulb and nominal cfm listed. ARI rating cfm is 350 cfm/ton for this product. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for
- operation to ±20% of nominal cfm. Rated accordance with ARI Standard 210.

  2. Condensing Unit Only Gross Cooling Capacity rated at 45° F (7.2° C) saturated suction temperature and at 95° F (35° C) ambient.
- ARI Net Cooling Capacity is calculated with matched blower coil and 25 ft. (7.2 m) of 1.375, 0.500 OD interconnecting tubing. EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures. Integrated Part Load Value is based on ARI Standard 210/240/340. Units are rated at 80° F (26.7° C) ambient, 80° F (26.7° C)
- entering dry bulb, and 67° F (19.4° C) entering wet bulb at ARI rated cfm.

  4. ARI Sound Rating is rated in accordance with ARI Standard 270.

  5. System Data based on maximum linear length 80 ft. (26.7 m)Maximum lift: suction 60 ft. (18.3 m) liquid 60 ft. (18.3
- m) For greater lengths, refer to refrigerant piping applications manual. Outdoor Fan Cfm is rated with standard air-dry coil outdoor.
- Refrigerant (operating) charge is for condensing unit (all circuits) with matching blower coils and 25 ft. (7.6 m) of interconnecting refrigerant lines.



### **General Data**

(Heat Pumps)

Table GD-2 General Data — Heat Pumps

iable GD-2 General Data — Hea	<u> </u>	TA / A 00 0 D
	TWA155B	TWA200B
Cooling Performance <sup>1</sup>		
Gross Cooling Capacity, BTUH (KW)		
Matched Air Handler, BTUH (KW)	166,000 (48.57)	216,000 (63.24)
Condensing Unit Only <sup>2</sup> , BTUH (KW)	161,000 (47.04)	209,000 (61.18)
ARI Net Cooling Capacity <sup>3</sup>	160,000 (46.74)	196,000 (61.18)
System Power KW	14.98	20.61
Condensing Unit Power KW	13.20	18.52
Heating Performance		
ARI Heating with Matched Air Handle		
HighTemperature Capacity, BTUH (I	KW) 151,000 (44.27)	206,000 (60.26)
LowTemperature Capacity, BTUH (kg	(W) 95,000 (27.67)	135,000 (39.66)
Compressor		
Number	2	2
Type	3D®Scroll	3D <sup>®</sup> Scroll
No. Speeds	1	1
No. Motors	2	2
Motor HP	6.25 (4.7)	8.33 (6.21)
Motor RPM, (KW)	2875	2875
ARI Sound Rating (Bels)4	8.8	8.8
System Data <sup>5</sup>		
No. Refrigerant Circuits	2	2
Suction Line, in. (mm) OD	1.375 (34.9)	1.375 (34.9)
Liquid Line, in. (mm) OD	0.500 (12.7)	0.500 (12.7)
Outdoor Coil - Type	Plate Fin	Plate Fin
Tube Size, in. (mm) OD	0.375 (9.5)	0.375 (9.5)
Face Area, sq. ft. (m²)	38.4 (3.57)	48.0 (4.46)
Rows	2	2
Fins Per Inch(mm)	18 (457)	18 (457)
Outdoor Fan Type	Propeller/Propeller	Propeller/Propeller
No. Used	2	2
Diameter, in. (mm)	26.00/26.00 (660.4/660.4)	28.00/28.00 (711/711)
DriveType	Direct/Direct	Direct/Direct
No. Speeds	1	1
CFM <sup>6</sup> , (L/S)	9800 (4624.6)	13400 (6323.5)
No. Motors	2	2
Motor HP, (KW)	0.33 (.24)	0.75 (.56)
Motor RPM	925	925
WOOT IN W	323	323

Cooling Performance is rated at 95° F (35° C) ambient, 80° F (26.7° C) entering dry bulb, 67° F (19.4° C) entering wet bulb and nominal cfm listed. ARI rating cfm is 350 cfm/ton for this product. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for

operation to ±20% of nominal cfm. Rated accordance with ARI Standard 210.

2. Condensing Unit Only Gross Cooling Capacity rated at 45° F (7.6° C) saturated suction temperature and at 95° F

 <sup>(35°</sup> C) ambient.
 ARI Net Cooling Capacity is calculated with matched blower coil and 25 ft. (7.6 m) of 1.375, 0.500 OD interconnecting tubing. EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures. Integrated Part Load Value is based on ARI Standard 210/240/340. Units are rated at 80° F (26.7° C) ambient, 80° F (26.7° C) entering dry bulb, and 67° F (19.4° C) entering wet bulb at ARI rated cfm.

4. ARI Sound Rating is rated in accordance with ARI Standard 270.

<sup>5.</sup> System Data based on maximum linear length 80 ft. (26.7 m)Maximum lift: suction 60 ft. (18.3 m) liquid 60 ft. (18.3 m) For greater lengths, refer to refrigerant piping applications manual. Outdoor Fan Cfm is rated with standard air-dry coil outdoor.

<sup>7.</sup> Refrigerant (operating) charge is for condensing unit (all circuits) with matching blower coils and 25 ft. (7.6 m) of interconnecting refrigerant lines.



# **General Data**

(Air Handlers)

Table GD-3 — General Data — Air Handlers

	TWE050A	TWE075A	TWE100A	TWE100B
System Data <sup>1</sup>				
No. Refrigerant Circuits	1	1	1	2
Suction Line, in. (mm) OD	1.120 (28.4)	1.380 (35.0)	1.380 (35.0)	1.380 (35.0)
Liquid Line, in. (mm) OD	0.38 (9.7)	0.50 (12.7)	0.50 (12.7)	0.50 (12.7)
Indoor Coil - Type	Plate Fin	Plate Fin	Plate Fin	Plate Fin
Tube Size, in. (mm) OD	0.375 (9.5)	0.375 (9.5)	0.375 (9.5)	0.375 (9.5)
Face Area, sq. ft. (m²)	5.00 (.47)	8.07 (.75)	11.18 (1.0)	11.18 (1.0)
Rows	3	3	3	3
Fins Per Inch	12	12	12	12
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve	Expansion Valve
Drain Connection No.	4	4	4	4
Drain Connection Size, in. (mr	n) 0.75 (19.0)	0.75 (19.0)	0.75 (19.0)	0.75 (19.0)
Drain Connection Type	PVC	PVC	PVC	PVC
Indoor Fan Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used	1	1	1	1
Diameter, in. (mm)	12.0 (304.8)	15.0 (381)	15.0 (381)	15.0 (381)
Width, in. (mm)	12.0 (304.8)	15.0 (381)	15.0 (381)	15.0 (381)
DriveType	Belt	Belt	Belt	Belt
No. Speeds	1	1	1	1
CFM, (L/S)	1670 (788.2)	2500 (1179.9)	3325 (1569.2)	3325 (1569.2)
No. Motors	1	1	1	1
Motor HP, (KW)				
<ul> <li>Standard/Oversized</li> </ul>	0.75/1.0 (.55/.74)	1.0/1.5 (.74/1.11)	1.5/2.0 (1.11/1.49)	1.5/2.0 (1.11/1.49)
Motor RPM (Standard)	1425	1425	1425	1425
Motor Frame Size (Standard)	56	56	56	56
Filters — Type	Throwaway	Throwaway	Throwaway	Throwaway
Furnished	Yes	Yes	Yes	Yes
No.	1/1	3	4	4
Recommended Size, in. (mm)	16x20x1/20x20x1 406.4x508x25. 4/508x508x25.4	16x25x1 406.4/635/25.4	16x25x1 406.4/635/25.4	16x25x1 406.4/635/25.4

#### Table GD-3 — General Data — Continued

	TWE155B	TWE200B
System Data		
No. Refrigerant Circuits	2	2
Suction Line, in. (mm) OD	1.38 (35.0)	1.38 (35.0)
Liquid Line, in. (mm) OD	0.500 (12.7)	0.500 (12.7)
Indoor Coil - Type	Plate Fin	Plate Fin
Tube Size, in. (mm) OD	0.375 (9.5)	0.375 (9.5)
Face Area, sq. ft. (m²)	16.33 (1.52)	21.63 (2.01)
Rows	3	3
Fins Per Inch	12	12
Refrigerant Control	Expansion Valve	Expansion Valve
Drain Connection No.	4	4
Drain Connection Size, in. (mm)	1.000 (25.4)	1.000 (25.4)
Drain Connection Type	PVC	PVC
Indoor Fan Type	FC Centrifugal	FC Centrifugal
No. Used	2	2
Diameter, in. (mm)	15.0 (381)	15.0 (381)
Width, in. (mm)	15.0 (381)	15.0 (381)
DriveType	Belt	Belt
No. Speeds	1	1
CFM, (L/S)	5000 (2360.0)	6650 (3138.4)
No. Motors	1	1
Motor HP, (KW)		
<ul> <li>Standard/Oversized</li> </ul>	2.0/3.0 (1.49/2.24)	3.0/5.0 (2.24/3.72)
Motor RPM (Standard)	1425	1425
Motor Frame Size (Standard)	145T	184T
Filters - Type	Throwaway	Throwaway
Furnished	Yes	Yes
No.	8	4/4
Recommended Size, in. (mm)	15x20x2 381x508x50.8	16x20x2/16x25x2 406.4x508x50.8/406.4x635x50.8

Notes:

1. ARI certified with various condensing units per ARI Standard 210. Refer to Performance Data section in this catalog.



(System)

Table PD-1 — Gross Cooling Capacities (MBh) TWA075A Heat Pump with TWE075A Air Handler

					85						95	Ambi	ent Te	mpera	ture	1	05					11!	=		
					၀၁						90					- 1	05					113	<u> </u>		
	Enter. Dry											Ente	ering V	Vet Ru	ılh										
	Bulb		61	6	67		73	6	1		67		73		<u>61</u>		67		73		61		67	7	3
CFM	ID	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.										
2250	75	75.7	60.5	83.8	50.3	92.4	34.1	73.2	59.2	80.9	49.1	89.1	32.9	70.2	57.7	77.5	47.8	85.3	31.6	66.7	56.0	73.6	46.2	81.1	30.2
	80	76.2	70.8	84.0	58.2	92.4	44.8	73.7	69.5	81.1	57.0	89.1	43.6	70.8	68.1	77.6	55.4	85.4	42.2	67.5	66.4	73.8	53.8	81.2	40.7
	85	78.3	78.3	84.1	68.4	92.5	55.4	76.1	76.1	81.2	67.1	89.3	54.2	73.6	73.6	77.8	65.6	85.5	52.8	70.6	70.6	74.0	63.9	81.4	51.3
	90	82.3	82.3	84.6	78.7	92.7	65.9	80.0	80.0	81.8	77.5	89.4	64.5	77.4	77.4	78.6	76.0	85.6	63.0	74.3	74.3	75.0	74.4	81.5	61.4
2500	75	77.2	63.4	85.3	49.5	93.9	34.7	74.6	62.1	82.3	48.2	90.5	33.6	71.4	60.5	78.8	46.8	86.6	32.2	67.8	58.8	74.8	45.2	82.2	30.6
	80	77.9	74.7	85.5	61.0	93.9	46.4	75.4	73.4	82.4	59.5	90.5	45.1	72.4	72.0	78.9	58.0	86.7	43.7	68.9	68.9	75.0	56.3	82.4	42.2
	85	80.9	80.9	85.6	72.0	94.1	57.9	78.6	78.6	82.6	70.7	90.7	56.7	75.9	75.9	79.2	69.2	86.8	55.3	72.8	72.8	75.3	67.5	82.6	53.7
	90	85.0	85.0	86.4	83.4	94.1	69.1	82.7	82.7	83.6	82.1	90.8	67.8	79.8	79.8	79.9	79.9	87.0	66.3	76.6	76.6	76.7	76.7	82.7	64.7
2750	75	78.5	66.1	86.5	51.2	95.1	35.3	75.7	64.8	83.4	49.9	91.6	34.1	72.5	63.2	79.8	48.4	87.6	32.7	68.9	61.5	75.8	46.8	83.1	31.1
	80	79.4	78.5	86.6	63.4	95.2	47.8	76.5	76.5	83.6	62.0	91.7	46.6	73.8	73.8	80.0	60.5	87.7	45.2	70.7	70.7	75.9	58.8	83.3	43.6
	85	83.1	83.1	86.9	75.4	95.3	60.3	80.7	80.7	83.9	74.1	91.8	59.0	77.9	77.9	80.4	72.6	87.9	57.6	74.6	74.6	76.5	70.9	83.5	55.8
	90	87.4	87.4	88.1	87.9	95.4	72.3	84.9	84.9	85.0	85.0	92.0	71.0	82.0	82.0	82.0	82.0	88.0	69.5	78.6	78.6	78.7	78.7	83.7	67.8
3000	75	79.5	68.8	87.6	52.8	96.1	35.8	76.8	67.4	84.4	51.5	92.5	34.5	73.5	65.9	80.7	50.0	88.4	33.1	69.8	64.1	76.6	48.4	83.9	31.5
	80	80.7	80.7	87.7	65.8	96.2	49.2	78.3	78.3	84.6	64.4	92.6	47.9	75.4	75.4	80.9	62.8	88.6	46.5	72.2	72.2	76.8	61.1	84.1	45.0
	85	85.1	85.1	88.1	78.8	96.4	62.6	82.6	82.6	85.0	77.4	92.7	61.1	79.6	79.6	81.5	75.9	88.7	59.6	76.3	76.3	77.5	74.2	84.3	58.0
	90	89.5	89.5	89.6	89.6	96.5	75.4	86.9	86.9	87.0	87.0	93.0	74.1	83.8	83.8	83.9	83.9	89.0	72.5	80.4	80.4	80.5	80.5	84.6	70.9

Note: All temperatures are in degrees Fahrenheit. Airflow is in cfm.

Table PD-1 — Gross Cooling Capacities (KW) TWA075A Heat Pump with TWE075A Air Handler

				;	85						95 '	Ambi	ent Te	mpera	ature	10	)5					11	5		
	Enter Dry Bulb		<u> </u>	6	7	7	'3	6	1		67		ering V 73		ılb 61		<u>67</u>		73		61		67	7	3
L/S	ID	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.
1062	24	22.2	17.7	24.5	14.7	27.1	10.0	21.4	17.3	23.7	14.4	26.1	9.6	20.5	16.9	22.7	14.0	25.0	9.3	19.5	16.4	21.6	13.5	23.7	8.8
	27	22.3	20.7	24.6	17.0	27.1	13.1	21.6	20.4	23.7	16.7	26.1	12.8	20.7	19.9	22.7	16.2	25.0	12.4	19.8	19.5	21.6	15.7	23.8	11.9
	29	22.9	22.9	24.6	20.0	27.1	16.2	22.3	22.3	23.8	19.6	26.1	15.9	21.5	21.5	22.8	19.2	25.0	15.5	20.7	20.7	21.7	18.7	23.8	15.0
	32	24.1	24.1	24.8	23.1	27.1	19.3	23.4	23.4	23.9	22.7	26.2	18.9	22.7	22.7	23.0	22.3	25.1	18.5	21.8	21.8	22.0	21.8	23.9	18.0
1180	24	22.6	18.6	25.0	14.5	27.5	10.2	21.8	18.2	24.1	14.1	26.5	9.8	20.9	17.7	23.1	13.7	25.3	9.4	19.9	17.2	21.9	13.2	24.1	9.0
	27	22.8	21.9	25.0	17.9	27.5	13.6	22.1	21.5	24.1	17.4	26.5	13.2	21.2	21.1	23.1	17.0	25.4	12.8	20.2	20.2	21.9	16.5	24.1	12.4
	29	23.7	23.7	25.1	21.1	27.5	17.0	23.0	23.0	24.2	20.7	26.6	16.6	22.2	22.2	23.2	20.2	25.4	16.2	21.3	21.3	22.1	19.8	24.2	15.7
	32	24.9	24.9	25.3	24.4	27.6	20.2	24.2	24.2	24.5	24.0	26.6	19.9	23.4	23.4	23.4	23.4	25.5	19.4	22.4	22.4	22.5	22.5	24.2	18.9
1298	24	23.0	19.4	25.3	15.0	27.8	10.3	22.2	19.0	24.4	14.6	26.8	10.0	21.2	18.5	23.4	14.2	25.6	9.6	20.2	18.0	22.2	13.7	24.3	9.1
	27	23.3	23.0	25.4	18.5	27.9	14.0	22.4	22.4	24.5	18.2	26.8	13.6	21.6	21.6	23.4	17.7	25.7	13.2	20.7	20.7	22.2	17.2	24.4	12.8
	29	24.3	24.3	25.4	22.1	27.9	17.6	23.6	23.6	24.6	21.7	26.9	17.3	22.8	22.8	23.5	21.3	25.7	16.9	21.9	21.9	22.4	20.8	24.4	16.3
	32	25.6	25.6	25.8	25.7	27.9	21.2	24.9	24.9	24.9	24.9	26.9	20.8	24.0	24.0	24.0	24.0	25.8	20.3	23.0	23.0	23.0	23.0	24.5	19.9
1416	24	23.3	20.1	25.6	15.5	28.1	10.5	22.5	19.7	24.7	15.1	27.1	10.1	21.5	19.3	23.6	14.6	25.9	9.7	20.4	18.8	22.4	14.2	24.6	9.2
	27	23.6	23.6	25.7	19.3	28.2	14.4	22.9	22.9	24.8	18.9	27.1	14.0	22.1	22.1	23.7	18.4	25.9	13.6	21.1	21.1	22.5	17.9	24.6	13.2
	29	24.9	24.9	25.8	23.1	28.2	18.3	24.2	24.2	24.9	22.7	27.1	17.9	23.3	23.3	23.8	22.2	26.0	17.5	22.3	22.3	22.7	21.7	24.7	17.0
	32	26.2	26.2	26.2	26.2	28.2	22.1	25.4	25.4	25.5	25.5	27.2	21.7	24.5	24.5	24.6	24.6	26.0	21.2	23.5	23.5	23.6	23.6	24.8	20.8

Note: All temperatures are in degrees Celsius. Airflow is in liters per second.



(System)

Table PD-2 — Gross Cooling Capacities (MBh) TWA 100A Heat Pump with TWE 100A Air Handler

				8	85						95	Ambie	ent Te	mpera	ture	10	)5					119	5		
	Enter Dry Bulb		31	6	7	7	3	6	1		<u>67</u>		ering V 73	Vet Bu	ılb 61		67 <u> </u>		73		61		<u> </u>	7	3
CFM	ID	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.								
3000	75	101.6	80.9	111.8	67.1	122.7	45.2	97.7	79.0	107.6	65.4	118.1	43.6	93.6	76.9	103.2	63.6	113.2	41.9	89.4	74.8	98.6	61.7	108.2	40.1
	80	102.1	94.6	112.0	77.2	122.7	59.2	98.4	92.6	107.8	75.3	118.0	57.5	94.4	90.6	103.4	73.5	113.2	55.7	90.4	88.6	98.8	71.5	108.2	53.8
	85	104.6	104.6	112.1	90.6	122.8	72.8	101.3	101.3	107.9	88.7	118.2	71.1	97.9	97.9	103.5	86.7	113.4	69.3	94.3	94.3	98.9	84.6	108.4	67.4
	90	109.6	109.6	112.7	104.1	122.9	86.4	106.3	106.3	108.6	102.2	118.3	84.6	102.8	102.8	104.4	100.2	113.5	82.8	99.1	99.1	100.1	98.2	108.5	80.7
3325	75	103.4	84.5	113.7	65.6	124.6	46.0	99.4	82.5	109.4	63.8	119.8	44.4	95.2	80.5	104.8	61.9	114.8	42.7	90.9	78.3	100.1	59.9	109.6	40.8
	80	104.3	99.5	113.9	80.6	124.6	61.1	100.4	97.5	109.5	78.7	119.8	59.3	96.4	95.5	104.8	76.6	114.9	57.5	92.0	92.0	100.2	74.6	109.7	55.6
	85	107.8	107.8	114.0	95.0	124.7	75.9	104.4	104.4	109.6	93.1	120.0	74.1	100.8	100.8	105.2	91.1	115.0	72.3	97.0	97.0	100.6	89.0	109.9	70.4
	90	113.0	113.0	114.9	109.8	124.8	90.6	109.5	109.5	110.8	107.9	120.0	88.6	105.8	105.8	106.5	105.9	115.1	86.7	102.0	102.0	101.9	101.9	110.0	84.7
3650	75	105.0	88.0	115.3	67.7	126.1	46.8	100.9	85.9	110.8	65.8	121.2	45.0	96.6	83.9	106.1	63.9	116.1	43.2	92.2	81.7	101.3	62.0	110.8	41.3
	80	106.2	104.2	115.4	83.8	126.1	62.8	102.3	102.3	110.9	81.7	121.3	61.1	98.0	98.0	106.2	79.7	116.2	59.2	94.3	94.3	101.4	77.6	111.0	57.4
	85	110.6	110.6	115.6	99.3	126.3	78.8	107.0	107.0	111.2	97.3	121.4	77.0	103.3	103.3	106.7	95.3	116.4	75.2	99.4	99.4	102.0	93.3	111.1	73.3
	90	115.9	115.9	117.0	115.4	126.3	94.4	112.3	112.3	112.2	112.2	121.5	92.5	108.4	108.4	108.4	108.4	116.5	90.5	104.5	104.5	104.4	104.4	111.3	88.5
3975	75	106.3	91.3	116.6	69.7	127.5	47.4	102.2	89.3	112.0	67.8	122.4	45.6	97.9	87.2	107.3	65.9	117.2	43.7	93.4	85.0	102.4	63.9	111.8	41.9
	80	107.4	107.4	116.7	86.6	127.5	64.5	103.9	103.9	112.1	84.7	122.5	62.7	100.1	100.1	107.4	82.6	117.3	60.9	96.2	96.2	102.5	80.5	112.0	59.0
	85	113.0	113.0	117.1	103.4	127.6	81.6	109.3	109.3	112.7	101.5	122.7	79.8	105.5	105.5	108.1	99.4	117.5	78.0	101.5	101.5	103.3	97.4	112.2	76.1
	90	118.5	118.5	118.4	118.4	127.7	98.2	114.8	114.8	114.7	114.7	122.8	96.3	110.8	110.8	110.7	110.7	117.6	94.3	106.6	106.6	106.6	106.6	112.4	92.3

Note: All temperatures are in degrees Fahrenheit. Airflow is in cfm.

Table PD-2 — Gross Cooling Capacities (KW) TWA100A Heat Pump with TWE100A Air Handler

					85						95	Ambi	ent Tei	mpera	ture	10	05					11!	5		
	Enter. Dry Bulb		61	6	7	7	<u> 3</u>	6	1		67		ering V 73		ılb <u>61</u>		67		<u>73</u>		61		67	7	3
L/S	ID	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.
1416	24	29.7	23.7	32.7	19.7	35.9	13.2	28.6	23.1	31.5	19.1	34.6	12.8	27.4	22.5	30.2	18.6	33.1	12.3	26.2	21.9	28.9	18.1	31.7	11.8
	27	29.9	27.7	32.8	22.6	35.9	17.3	28.8	27.1	31.6	22.1	34.6	16.8	27.6	26.5	30.3	21.5	33.2	16.3	26.5	25.9	28.9	20.9	31.7	15.8
	29	30.6	30.6	32.8	26.5	35.9	21.3	29.7	29.7	31.6	26.0	34.6	20.8	28.7	28.7	30.3	25.4	33.2	20.3	27.6	27.6	29.0	24.8	31.7	19.7
	32	32.1	32.1	33.0	30.5	36.0	25.3	31.1	31.1	31.8	29.9	34.6	24.8	30.1	30.1	30.6	29.3	33.2	24.2	29.0	29.0	29.3	28.8	31.8	23.6
1569	24	30.3	24.7	33.3	19.2	36.5	13.5	29.1	24.2	32.0	18.7	35.1	13.0	27.9	23.6	30.7	18.1	33.6	12.5	26.6	22.9	29.3	17.5	32.1	11.9
	27	30.5	29.1	33.3	23.6	36.5	17.9	29.4	28.6	32.1	23.0	35.1	17.4	28.2	28.0	30.7	22.4	33.6	16.8	26.9	26.9	29.3	21.8	32.1	16.3
	29	31.6	31.6	33.4	27.8	36.5	22.2	30.6	30.6	32.1	27.2	35.1	21.7	29.5	29.5	30.8	26.7	33.7	21.2	28.4	28.4	29.4	26.1	32.2	20.6
	32	33.1	33.1	33.6	32.2	36.5	26.5	32.1	32.1	32.4	31.6	35.1	25.9	31.0	31.0	31.2	31.0	33.7	25.4	29.9	29.9	29.8	29.8	32.2	24.8
1723	24	30.7	25.8	33.8	19.8	36.9	13.7	29.5	25.2	32.4	19.3	35.5	13.2	28.3	24.6	31.1	18.7	34.0	12.7	27.0	23.9	29.7	18.1	32.5	12.1
	27	31.1	30.5	33.8	24.5	36.9	18.4	30.0	29.9	32.5	23.9	35.5	17.9	28.7	28.7	31.1	23.3	34.0	17.3	27.6	27.6	29.7	22.7	32.5	16.8
	29	32.4	32.4	33.8	29.1	37.0	23.1	31.3	31.3	32.6	28.5	35.6	22.6	30.2	30.2	31.2	27.9	34.1	22.0	29.1	29.1	29.9	27.3	32.5	21.5
	32	33.9	33.9	34.3	33.8	37.0	27.6	32.9	32.9	32.8	32.8	35.6	27.1	31.8	31.8	31.7	31.7	34.1	26.5	30.6	30.6	30.6	30.6	32.6	25.9
1876	24	31.1	26.7	34.1	20.4	37.3	13.9	29.9	26.1	32.8	19.9	35.9	13.3	28.7	25.5	31.4	19.3	34.3	12.8	27.3	24.9	30.0	18.7	32.7	12.3
	27	31.5	31.5	34.2	25.4	37.3	18.9	30.4	30.4	32.8	24.8	35.9	18.4	29.3	29.3	31.4	24.2	34.4	17.8	28.2	28.2	30.0	23.6	32.8	17.3
	29	33.1	33.1	34.3	30.3	37.4	23.9	32.0	32.0	33.0	29.7	35.9	23.4	30.9	30.9	31.6	29.1	34.4	22.8	29.7	29.7	30.3	28.5	32.9	22.3
	32	34.7	34.7	34.7	34.7	37.4	28.8	33.6	33.6	33.6	33.6	35.9	28.2	32.4	32.4	32.4	32.4	34.4	27.6	31.2	31.2	31.2	31.2	32.9	27.0

Note: All temperatures are in degrees Celsius. Airflow is in liters per second.



(System)

Table PD-3 — Gross Cooling Capacities (MBh) TWA155A Heat Pump with TWE155A Air Handler

			85				!	95	Ambie	ent Te	mpera	ture	10	05					115		_
Enter Dry Bulb		<u> </u>	67	73	6	1		67						67		73	61		67	73	_
ID	Total	Sens. To	tal Sens	s. Total Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	. Total	Sens.	Total	Sens.	Total S	ens. Tot	al Sens	. Total Sen	ıs.
75	152.8	121.616	9.0 101.:	2 186.3 68.7	147.6	119.0	163.1	98.8	179.6	66.4	141.5	116.0	156.2	96.0	171.9	63.7	134.4 11	2.5 148	.4 92.9	163.4 60.8	.8
80	153.5	142.2 16	9.3 117.	186.4 90.4	148.5	139.6	163.5	114.7	179.7	87.9	142.6	136.6	156.4	111.4	172.1	85.0	135.8 13	33.3 148	.7 108.0	163.7 82.0	0
85	157.6	157.6 16	9.5 137.4	1 186.6 111.5	153.3	153.3	163.7	134.8	180.0	109.0	148.1	148.1	156.9	131.8	172.5	106.2	142.1 14	12.1 149	.2 128.4	164.1 103.	.1
90	165.7	165.7 17	0.4 158.	1 186.8 132.2	161.1	161.1	164.8	155.5	180.2	129.6	155.7	155.7	158.2	152.6	172.7	126.6	149.6 14	49.6 15C	.9 149.3	164.3 123.	.4
75	155.8	127.4 17	2.1 99.7	189.4 70.0	150.4	124.7	166.0	97.1	182.4	67.6	144.0	121.6	158.8	94.2	174.5	64.9	136.7 11	8.1 150	.8 90.9	165.7 61.8	8
80	156.9	150.0 17	2.2 122.	3 189.5 93.4	151.8	147.5	166.1	119.7	182.6	90.9	145.7	144.4	159.1	116.6	174.7	88.1	138.7 13	38.7 151	.1 113.1	166.0 84.9	9
85	162.9	162.9 17	2.7 144.	6 189.8 116.5	158.3	158.3	166.6	141.9	182.9	114.0	152.8	152.8	159.6	138.9	175.1	111.2	146.5 14	16.5 151	.8 135.5	166.5 108.	.0
90	171.3	171.3 17	4.1 167.4	1 189.9 138.9	166.4	166.4	168.3	164.8	183.1	136.2	160.7	160.7	160.9	160.9	175.4	133.2	154.3 15	54.3 154	.4 154.4	166.8 129.	.9
75	158.3	132.9 17	4.6 103.	0 191.8 71.3	152.8	130.2	168.3	100.5	184.7	68.7	146.2	127.0	161.0	97.5	176.5	65.9	138.8 12	23.5 152	.7 94.2	167.5 62.7	 7
80	160.1	157.7 17	4.8 127.	1 192.0 96.3	154.1	154.1	168.6	124.6	184.9	93.8	148.6	148.6	161.3	121.5	176.9	90.9	142.3 14	12.3 153	.1 118.0	168.0 87.8	8
85	167.4	167.4 17	5.3 151.	5 192.3 121.3	162.6	162.6	169.2	148.8	185.3	118.8	156.8	156.8	162.0	145.7	177.1	115.4	150.3 19	50.3 154	.0 142.3	168.3 112.	.1
90	176.1	176.1 17	7.5 176.	4 192.6 145.3	171.0	171.0	171.2	171.2	185.6	142.6	165.0	165.0	165.2	165.2	177.6	139.6	158.3 15	58.3 158	.5 158.5	168.9 136.	.2
75	160.5	138.2 17	6.8 106.	3 193.9 72.2	154.8	135.5	170.3	103.7	186.6	69.6	148.1	132.3	162.8	100.7	178.3	66.7	140.6 12	28.7 154	.4 97.4	169.1 63.6	6
80	162.6	162.5 17	7.0 132.	2 194.1 99.1	157.7	157.7	170.6	129.4	186.9	96.5	151.9	151.9	163.2	126.3	178.7	93.7	145.4 14	15.4 154	.8 122.7	169.7 90.9	5
85	171.5	171.5 17	7.7 158.	2 194.3 125.6	166.4	166.4	171.4	155.5	187.1	122.9	160.4	160.4	164.1	152.4	179.0	119.8	153.6 15	53.6 156	.1 148.9	170.1 116.	.4
90	180.4	180.4 18	0.6 180.	6 194.8 151.5	175.1	175.1	175.2	175.2	187.6	148.8	168.9	168.9	169.0	169.0	179.5	145.7	161.9 10	61.9 162	.1 162.1	170.6 142.	.3
	Dry Bulb ID 75 80 85 90 75 80 85 90 75 80 85 90 75 80 85 90 75 80 85 90 75 80 85 80 85	Bulib         6           ID         Total           75         152.8           80         153.5           85         157.6           90         165.7           75         155.8           80         162.9           90         171.3           75         158.3           80         160.1           85         167.4           90         176.1           75         160.5           80         162.6           85         171.5	Dry Bulb         61	Enter. Dry Bulb  61  67  ID Total Sens. Total Sens.  75  152.8  121.6 169.0 101.2  80  153.5  142.2 169.3 117.1  85  157.6  157.6  165.7  165.7  165.7  170.4 158.  75  155.8  127.4 172.1  99.7  80  156.9  150.0 172.2 122.3  85  162.9  162.9  171.3  171.3  174.1  167.4  75  158.3  132.9  174.6  103.0  80  160.1  157.7  174.8  127.4  90  176.1  176.1  177.5  176.2  80  162.6  162.5  177.0  132.3  85  171.5  171.5  177.7  158.3	Enter. Dry Bulb         61         67         73           ID         Total         Sens. Total Sens. Total Sens.         Total Sens. Total Sens. Total Sens.           75         152.8         121.6 169.0 101.2 186.3 68.7           80         153.5         142.2 169.3 117.1 186.4 90.4           85         157.6         157.6 169.5 137.4 186.6 111.5           90         165.7         165.7 170.4 158.1 186.8 132.2           75         155.8         127.4 172.1 99.7 189.4 70.0           80         156.9         150.0 172.2 122.3 189.5 93.4           85         162.9         162.9 172.7 144.6 189.8 116.5           90         171.3         171.3 174.1 167.4 189.9 138.9           75         158.3         132.9 174.6 103.0 191.8 71.3           80         160.1         157.7 174.8 127.4 192.0 96.3           85         167.4         167.4 175.3 151.5 192.3 121.3           90         176.1         176.1 177.5 176.4 192.6 145.3           75         160.5         138.2 176.8 106.3 193.9 72.2           80         162.6 162.5 177.0 132.2 194.1 99.1           85         167.4 175.5 177.7 158.2 194.3 125.6	Enter. Dry Bulb  61 67 73 6  ID Total Sens. Total Sens. Total Sens. Total  75 152.8 121.6 169.0 101.2 186.3 68.7 147.6  80 153.5 142.2 169.3 117.1 186.4 90.4 148.5  85 157.6 157.6 169.5 137.4 186.6 111.5 153.3  90 165.7 165.7 170.4 158.1 186.8 132.2 161.1  75 155.8 127.4 172.1 99.7 189.4 70.0 150.4  80 156.9 150.0 172.2 122.3 189.5 93.4 151.8  85 162.9 162.9 172.7 144.6 189.8 116.5 158.3  90 171.3 171.3 174.1 167.4 189.9 138.9 166.4  75 158.3 132.9 174.6 103.0 191.8 71.3 152.8  80 160.1 157.7 174.8 127.4 192.0 96.3 154.1  85 167.4 167.4 175.3 151.5 192.3 121.3 162.6  90 176.1 176.1 177.5 176.4 192.6 145.3 171.0  75 160.5 138.2 176.8 106.3 193.9 72.2 154.8  80 162.6 162.5 177.0 132.2 194.1 99.1 157.7  85 171.5 171.5 177.7 158.2 194.3 125.6 166.4	Enter. Dry Bulb  61 67 73 61  ID Total Sens. Total Sens. Total Sens.  75 152.8 121.6 169.0 101.2 186.3 68.7 80 153.5 142.2 169.3 117.1 186.4 90.4 85 157.6 157.6 169.5 137.4 186.6 111.5 90 165.7 165.7 170.4 158.1 186.8 132.2 161.1 161.1  75 155.8 127.4 172.1 99.7 189.4 70.0 150.4 124.7 80 156.9 150.0 172.2 122.3 189.5 93.4 151.8 147.5 85 162.9 162.9 172.7 144.6 189.8 116.5 158.3 158.3 90 171.3 171.3 174.1 167.4 189.9 138.9 166.4 166.4 75 158.3 132.9 174.6 103.0 191.8 71.3 152.8 130.2 80 160.1 157.7 174.8 127.4 192.0 96.3 154.1 154.1 85 167.4 167.4 175.3 151.5 192.3 121.3 162.6 162.6 90 176.1 176.1 177.5 176.4 192.6 145.3 171.0 171.0 75 160.5 138.2 176.8 106.3 193.9 72.2 154.8 135.5 80 162.6 162.5 177.0 132.2 194.1 99.1 157.7 157.7 85 171.5 171.5 177.7 158.2 194.3 125.6 166.4 166.4	Enter: Dry Bulb 61 67 73 61  ID Total Sens. Total Sens. Total Sens. Total Sens. Total 75 152.8 121.6 169.0 101.2 186.3 68.7 80 153.5 142.2 169.3 117.1 186.4 90.4 85 157.6 157.6 169.5 137.4 186.6 111.5 90 165.7 165.7 170.4 158.1 186.8 132.2 161.1 161.1 164.8 75 155.8 127.4 172.1 99.7 189.4 70.0 80 156.9 150.0 172.2 122.3 189.5 93.4 85 162.9 162.9 172.7 144.6 189.8 116.5 158.3 158.3 166.6 90 171.3 171.3 174.1 167.4 189.9 138.9 166.4 166.4 168.3 80 160.1 1577 174.8 127.4 192.0 96.3 81 162.6 162.7 176.4 192.6 145.3 171.0 171.0 171.2 175 160.5 138.2 176.8 106.3 193.9 72.2 80 162.6 162.5 177.0 132.2 194.1 99.1 85 171.5 171.5 177.7 158.2 194.3 125.6 166.4 166.4 166.4 171.4	Enter. Dry Bulb 61 67 73 61 67 73 61 667  ID Total Sens. Total Sen	Enter. Dry Bulb 61 67 73 61 67 73 61 67 67 Enter Bulb 61 67 73 61 567 67 67 67 67 67 67 67 67 67 67 67 67 6	Enter. Dry Bulb 61 67 73 61 96. Total Sens. Total Sens	Enter. Dry Bulb 61 67 73 61 Sens. Total Se	Enter: Dry Bulb 61 67 73 61 61 67 73 61 61 67 73 61 61 67 73 61 61 61 67 67 61 61 61 61 61 61 61 61 61 61 61 61 61	Enter. Dry Bullb 61 67 73 61  ID Total Sens. Total Sen	Enter: Dry Bulb 61 67 73 61 61 67 73 61 61 67 Total Sens. Total Se	Enter. Dry Bulb 61 67 73 61 61 67 73 61 61 67 73 61 61 67 73 61 61 67 73 61 61 67 73 61 61 67 73 61 61 61 61 61 61 61 61 61 61 61 61 61	Enter. Dry Bulb 61 67 73 61 667 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 61 67 61 61 61 61 61 61 61 61 61 61 61 61 61	Enter: Dry Bulb 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 67 73 61 61 67 73 61 61 67 73 61 61 67 73 61 61 67 67 73 61 61 67 67 73 61 61 67 61 61 61 61 61 61 61 61 61 61 61 61 61	Enter: Dry Bulb 61 67 73 61 61 67 73 61 5ens. Total Sens. Total Se	Enter: Dry Bulb 61 67 73 61 56.8 Total Sens. Total Sen	Entering   Find   Fin

Note: All temperatures are in degrees Fahrenheit. Airflow is in cfm.

Table PD-3 — Gross Cooling Capacities (KW) TWA155A Heat Pump with TWE155A Air Handler

				;	85						95 '	Ambie	ent Te	mpera	ature	10	)5					11	5		
	Enter Dry Bulb		<u> </u>	6	7	7	3	6	1		67		ering V 73		ılb 61		67		73	<u> </u>	61		67	7	3
L/S	ID	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.
2124	24	44.7	35.6	49.5	29.6	54.6	20.1	43.2	34.8	47.8	28.9	52.6	19.4	41.4	34.0	45.7	28.1	50.3	18.7	39.4	32.9	43.5	27.2	47.8	17.8
	27	44.9	41.6	49.6	34.3	54.6	26.5	43.5	40.9	47.9	33.6	52.6	25.7	41.7	40.0	45.8	32.6	50.4	24.9	39.8	39.0	43.5	31.6	47.9	24.0
	29	46.1	46.1	49.6	40.2	54.6	32.6	44.9	44.9	47.9	39.5	52.7	31.9	43.4	43.4	45.9	38.6	50.5	31.1	41.6	41.6	43.7	37.6	48.0	30.2
	32	48.5	48.5	49.9	46.3	54.7	38.7	47.2	47.2	48.2	45.5	52.8	37.9	45.6	45.6	46.3	44.7	50.6	37.1	43.8	43.8	44.2	43.7	48.1	36.1
2360	24	45.6	37.3	50.4	29.2	55.4	20.5	44.0	36.5	48.6	28.4	53.4	19.8	42.2	35.6	46.5	27.6	51.1	19.0	40.0	34.6	44.2	26.6	48.5	18.1
	27	46.0	43.9	50.4	35.8	55.5	27.4	44.4	43.2	48.6	35.0	53.5	26.6	42.7	42.3	46.6	34.1	51.2	25.8	40.6	40.6	44.2	33.1	48.6	24.9
	29	47.7	47.7	50.6	42.3	55.6	34.1	46.3	46.3	48.8	41.6	53.6	33.4	44.7	44.7	46.7	40.7	51.3	32.5	42.9	42.9	44.4	39.7	48.7	31.6
	32	50.1	50.1	51.0	49.0	55.6	40.7	48.7	48.7	49.3	48.3	53.6	39.9	47.1	47.1	47.1	47.1	51.3	39.0	45.2	45.2	45.2	45.2	48.8	38.0
2596	24	46.4	38.9	51.1	30.2	56.2	20.9	44.7	38.1	49.3	29.4	54.1	20.1	42.8	37.2	47.1	28.6	51.7	19.3	40.6	36.2	44.7	27.6	49.0	18.4
	27	46.9	46.2	51.2	37.3	56.2	28.2	45.1	45.1	49.4	36.5	54.1	27.5	43.5	43.5	47.2	35.6	51.8	26.6	41.7	41.7	44.8	34.6	49.2	25.7
	29	49.0	49.0	51.3	44.4	56.3	35.5	47.6	47.6	49.5	43.6	54.3	34.8	45.9	45.9	47.4	42.7	51.8	33.8	44.0	44.0	45.1	41.7	49.3	32.8
	32	51.6	51.6	52.0	51.7	56.4	42.6	50.1	50.1	50.1	50.1	54.3	41.8	48.3	48.3	48.4	48.4	52.0	40.9	46.4	46.4	46.4	46.4	49.4	39.9
2832	24	47.0	40.5	51.8	31.1	56.8	21.1	45.3	39.7	49.9	30.4	54.6	20.4	43.4	38.7	47.7	29.5	52.2	19.5	41.2	37.7	45.2	28.5	49.5	18.6
	27	47.6	47.6	51.8	38.7	56.8	29.0	46.2	46.2	50.0	37.9	54.7	28.3	44.5	44.5	47.8	37.0	52.3	27.4	42.6	42.6	45.3	35.9	49.7	26.5
	29	50.2	50.2	52.0	46.3	56.9	36.8	48.7	48.7	50.2	45.5	54.8	36.0	47.0	47.0	48.1	44.6	52.4	35.1	45.0	45.0	45.7	43.6	49.8	34.1
	32	52.8	52.8	52.9	52.9	57.0	44.4	51.3	51.3	51.3	51.3	54.9	43.6	49.4	49.4	49.5	49.5	52.6	42.7	47.4	47.4	47.5	47.5	50.0	41.7

Note: All temperatures are in degrees Celsius. Airflow is in liters per second.



(System)

Table PD-4 — Gross Cooling Capacities (MBh) TWA200A Heat Pump with TWE200A Air Handler

				8	5					95	Ambie	ent Te	mpera	ture	10	05					11!	5		
	Enter Dry Bulb		31	67	7	73	6	1		67	Ente	ering V 73	Vet Bu	lb 31		67		73		61		67	73	
CFM	ID					Total Sens.					Total	,											Total S	
CI IVI	טו	iotai	Jens.	iotai	Jens.	iotai Seris.	IOtal	36113	. IUtai	Jens.	. iotai	Jens.	iotai .	Jens.	iotai	Jens.	iotai	Jens.	IUlai	Jens.	iotai	Jens.	iotai 3	ens.
6000	75	200.7	159.3	220.91	132.5	242.6 89.4	192.9	155.4	1212.4	129.1	233.3	86.1	184.8	151.3	203.6	125.5	223.6	82.8	176.4	147.1	194.5	121.8	213.6	79.3
	80	201.5	186.0	221.2	152.1	242.5 117.0	194.0	182.1	212.8	148.5	233.3	113.4	186.2	178.1	204.0	144.7	223.7	109.8	178.1	174.0	194.7	140.4	213.8 1	06.2
	85	206.2	206.2	221.4	178.3	242.8 143.7	199.7	199.7	213.0	174.4	233.6	140.2	192.9	192.9	204.3	170.5	224.0	136.5	185.8	185.8	195.2	166.4	214.1 1	32.8
	90	216.2	216.2	222.3 2	204.7	243.0 170.3	209.5	209.5	214.2	200.8	233.8	166.8	202.5	202.5	205.8	196.9	224.1	162.6	195.2	195.2	197.2	193.0	214.3 1	58.7
6675	75	204.4	166.6	224.8	129.6	246.5 91.1	196.4	162.6	216.1	125.9	236.9	87.8	188.1	158.5	207.0	122.1	226.9	84.3	179.4	154.2	197.6	118.3	216.6 8	30.6
	80	205.8	195.9	225.1	159.0	246.5 120.7	198.1	192.0	216.2	154.9	236.9	117.2	190.2	188.0	207.2	151.0	227.1	113.6	181.5	181.5	197.9	146.9	216.8 1	09.8
	85	212.7	212.7	225.3	187.3	246.7 149.9	205.9	205.9	216.7	183.3	237.2	146.3	198.8	198.8	207.7	179.3	227.4	142.7	191.4	191.4	198.6	175.3	217.2 1	38.9
	90	223.1	223.1	226.9 2	216.3	246.8 178.4	216.1	216.1	218.7	212.4	237.3	174.6	208.8	208.8	210.2	208.5	227.6	170.8	201.2	201.2	201.0	201.0	217.4 1	66.8
7350	75	207.6	173.6	228.0 1	133.8	249.6 92.7	199.4	169.5	219.1	130.1	239.8	89.1	190.8	165.4	209.8	126.3	229.6	85.5	182.1	161.1	200.2	122.4	219.1	81.8
	80	209.7	205.5	228.1	165.1	249.7 124.3	202.0	201.6	219.3	161.2	239.9	120.8	193.6	193.6	210.0	157.2	229.8	117.1	186.1	186.1	200.5	153.0	219.4 1	13.4
	85	218.4	218.4	228.6	195.9	250.0 155.8	211.3	211.3	219.9	192.0	240.3	152.2	203.9	203.9	210.8	187.9	230.2	148.5	196.2	196.2	201.5	183.8	219.8 1	44.8
	90	229.1	229.1	231.1	227.5	250.1 186.4	221.9	221.9	221.7	221.7	240.4	182.5	214.3	214.3	214.1	214.1	230.4	178.6	206.3	206.3	206.2	206.2	220.0 1	74.6
3025	75	210.3	180.3	230.8	137.8	252.3 93.8	202.0	176.2	221.6	134.1	242.3	90.3	193.3	172.0	212.1	130.3	231.9	86.6	184.4	167.7	202.4	126.4	221.1 8	32.8
	80	212.4	212.4	231.0	171.2	252.4 127.7	205.3	205.3	221.9	167.2	242.5	124.2	197.8	197.8	212.5	163.1	232.1	120.5	190.1	190.1	202.8	159.0	221.5 1	16.7
	85	223.4	223.4	231.6 2	204.3	252.7 161.5	216.1	216.1	222.8	200.3	242.8	157.9	208.4	208.4	213.6	196.2	232.3	153.7	200.5	200.5	204.1	192.1	221.7 1	49.7
	90	234.5	234.5	234.3 2	234.3	252.9 194.0	227.0	227.0	226.8	226.8	243.1	190.1	219.0	219.0	218.9	218.9	232.8	186.2	210.8	210.8	210.7	210.7	222.2 1	82.1

Note: All temperatures are in degrees Fahrenheit. Airflow is in cfm.

Table PD-4 — Gross Cooling Capacities (KW) TWA200A Heat Pump with TWE200A Air Handler

					85						95	Ambi	ientTer	npera	ture	10	)5					11	5		
	Enter. Dry Bulb		<u> 61 </u>	6	57		73	6	1		<u>67</u>		ering V 73		ılb <u>61</u>		<u>67</u>		<u>73</u>		<u>61</u>		67	7	3
L/S	ID	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.
2832	24	58.8	46.7	64.7	38.8	71.0	26.2	56.5	45.5	62.2	37.8	68.3	25.2	54.1	44.3	59.6	36.7	65.5	24.2	51.6	43.1	57.0	35.7	62.5	23.2
	27	59.0	54.5	64.8	44.5	71.0	34.2	56.8	53.3	62.3	43.5	68.3	33.2	54.5	52.1	59.7	42.4	65.5	32.2	52.1	50.9	57.0	41.1	62.6	31.1
	29	60.4	60.4	64.8	52.2	71.1	42.1	58.5	58.5	62.4	51.1	68.4	41.0	56.5	56.5	59.8	49.9	65.6	40.0	54.4	54.4	57.2	48.7	62.7	38.9
	32	63.3	63.3	65.1	59.9	71.2	49.9	61.3	61.3	62.7	58.8	68.5	48.8	59.3	59.3	60.3	57.7	65.6	47.6	57.2	57.2	57.7	56.5	62.7	46.5
3150	24	59.9	48.8	65.8	37.9	72.2	26.7	57.5	47.6	63.3	36.9	69.4	25.7	55.1	46.4	60.6	35.8	66.4	24.7	52.5	45.2	57.9	34.6	63.4	23.6
	27	60.3	57.4	65.9	46.6	72.2	35.4	58.0	56.2	63.3	45.4	69.4	34.3	55.7	55.0	60.7	44.2	66.5	33.3	53.1	53.1	57.9	43.0	63.5	32.2
	29	62.3	62.3	66.0	54.8	72.2	43.9	60.3	60.3	63.4	53.7	69.5	42.8	58.2	58.2	60.8	52.5	66.6	41.8	56.0	56.0	58.1	51.3	63.6	40.7
	32	65.3	65.3	66.4	63.3	72.2	52.2	63.3	63.3	64.0	62.2	69.5	51.1	61.1	61.1	61.6	61.1	66.6	50.0	58.9	58.9	58.9	58.9	63.7	48.8
3469	24	60.8	50.8	66.8	39.2	73.1	27.1	58.4	49.6	64.1	38.1	70.2	26.1	55.9	48.4	61.4	37.0	67.2	25.0	53.3	47.2	58.6	35.8	64.1	23.9
	27	61.4	60.2	66.8	48.3	73.1	36.4	59.1	59.0	64.2	47.2	70.3	35.4	56.7	56.7	61.5	46.0	67.3	34.3	54.5	54.5	58.7	44.8	64.2	33.2
	29	64.0	64.0	66.9	57.4	73.2	45.6	61.9	61.9	64.4	56.2	70.3	44.6	59.7	59.7	61.7	55.0	67.4	43.5	57.5	57.5	59.0	53.8	64.4	42.4
	32	67.1	67.1	67.7	66.6	73.2	54.6	65.0	65.0	64.9	64.9	70.4	53.4	62.7	62.7	62.7	62.7	67.5	52.3	60.4	60.4	60.4	60.4	64.4	51.1
3787	24	61.6	52.8	67.6	40.4	73.9	27.5	59.1	51.6	64.9	39.3	70.9	26.4	56.6	50.4	62.1	38.2	67.9	25.4	54.0	49.1	59.3	37.0	64.7	24.3
	27	62.2	62.2	67.6	50.1	73.9	37.4	60.1	60.1	65.0	49.0	71.0	36.4	57.9	57.9	62.2	47.8	68.0	35.3	55.7	55.7	59.4	46.5	64.9	34.2
	29	65.4	65.4	67.8	59.8	74.0	47.3	63.3	63.3	65.2	58.6	71.1	46.2	61.0	61.0	62.5	57.5	68.0	45.0	58.7	58.7	59.8	56.3	64.9	43.8
	32	68.7	68.7	68.6	68.6	74.1	56.8	66.5	66.5	66.4	66.4	71.2	55.7	64.1	64.1	64.1	64.1	68.2	54.5	61.7	61.7	61.7	61.7	65.1	53.3

Note: All temperatures are in degrees Celsius. Airflow is in liters per second.



(TWA075A)

ODTemp			Suc	tion Referer	ceTempera	ture °F	
°F		30	35	40	45	50	55
	Head press PSIG	165	170	176	182	188	195
65	Cap. Btuh/1000	70.0	77.4	85.1	93.1	101.3	109.
	OD Unit KW	4.58	4.67	4.78	4.89	5.02	5.14
	Head press PSIG	191	197	203	209	215	222
75	Cap. Btuh/1000	68.2	75.2	82.5	90.1	97.8	105
	OD Unit KW	5.04	5.15	5.27	5.39	5.52	5.6
	Head press PSIG	219	225	231	238	245	252
85	Cap. Btuh/1000	65.5	72.3	79.2	86.4	93.6	101.
	OD Unit KW	5.59	5.71	5.84	5.97	6.10	6.2
	Head press PSIG	250	256	263	270	277	28
95	Cap. Btuh/1000	62.3	68.7	75.3	82.0	88.9	95.
	OD Unit KW	6.22	6.35	6.48	6.61	6.74	6.8
	Head press PSIG	283	289	296	304	311	319
105	Cap. Btuh/1000	58.6	64.6	70.8	77.1	83.7	90.
	OD Unit KW	6.93	7.06	7.18	7.31	7.45	7.5
	Head press PSIG	318	325	332	340	347	35
115	Cap. Btuh/1000	54.4	60.0	65.8	71.8	78.0	84.
	OD Unit KW	7.72	7.83	7.95	8.08	8.22	8.3

Table PD-5	- Gross Cooling Perforn	nance (KW)	TWA075	A Heat Pu	mp Only		
ODTemp			Suc	tion Referen	ceTemperat	ure °C	
°C		-1.1	1.7	4.4	7.2	10	12.8
	Head pressure (kPA)	1136	1173	1213	1255	1298	1343
18.3	Capacity (kW)	20.5	22.6	24.9	27.2	29.7	32.1
	OD Unit Power (kW)	4.58	4.67	4.78	4.89	5.02	5.14
	Head pressure (kPA)	1315	1355	1397	1440	1484	1531
23.9	Capacity (kW)	20.0	22.0	24.2	26.4	28.6	30.9
	OD Unit Power (kW)	5.04	5.15	5.27	5.39	5.52	5.65
	Head pressure (kPA)	1509	1552	1596	1642	1689	1738
29.4	Capacity (kW)	19.2	21.2	23.2	25.3	27.4	29.6
	OD Unit Power (kW)	5.59	5.71	5.84	5.97	6.10	6.24
	Head pressure (kPA)	1721	1766	1812	1860	1909	1959
35.0	Capacity (kW)	18.3	20.1	22.0	24.0	26.0	28.1
	OD Unit Power (kW)	6.22	6.35	6.48	6.61	6.74	6.88
	Head pressure (kPA)	1948	1995	2043	2093	2144	2197
40.6	Capacity (kW)	17.2	18.9	20.7	22.6	24.5	26.5
	OD Unit Power (kW)	6.93	7.06	7.18	7.31	7.45	7.59
	Head pressure (kPA)	2192	2240	2290	2341	2395	2450
46.1	Capacity (kW)	15.9	17.6	19.3	21.0	22.8	24.7
	OD Unit Power (kW)	7.72	7.83	7.95	8.08	8.22	8.36
	Head pressure (kPA)	2320	2369	2419	2471	2526	2583
48.9	Capacity (kW)	15.3	16.9	18.5	20.2	22.0	23.8
	OD Unit Power (kW)	8.13	8.24	8.36	8.49	8.62	8.76



(TWA100A)

ODTemp			Suc	tion Referer	iceTemperat	ure °F	
°F		30	35	40	45	50	55
	Head press PSIG	175	181	187	194	201	208
65	Cap. Btuh/1000	94.8	104.0	113.6	123.5	133.7	144.2
	OD Unit KW	6.26	6.41	6.57	6.74	6.93	7.12
	Head press PSIG	200	207	213	220	227	235
75	Cap. Btuh/1000	90.4	99.1	108.1	117.5	127.3	137.3
	OD Unit KW	6.92	7.08	7.25	7.44	7.64	7.85
	Head press PSIG	229	235	242	250	257	265
85	Cap. Btuh/1000	85.7	93.9	102.5	111.5	120.8	130.4
	OD Unit KW	7.70	7.88	8.07	8.27	8.49	8.71
	Head press PSIG	259	266	274	282	290	298
95	Cap. Btuh/1000	80.7	88.6	96.8	105.4	114.2	123.
	OD Unit KW	8.60	8.79	9.00	9.22	9.44	9.67
	Head press PSIG	293	300	308	316	325	334
105	Cap. Btuh/1000	75.5	83.0	91.0	99.2	107.6	116.
	OD Unit KW	9.60	9.82	10.05	10.28	10.51	10.7
	Head press PSIG	328	337	345	354	363	372
115	Cap. Btuh/1000	70.0	77.4	85.0	92.9	100.9	109.0
	OD Unit KW	10.72	10.96	11.21	11.45	11.69	11.93

ODTemp			Suc	tion Referer	ceTemperat	ure °F	
°C		-1.1	1.7	4.4	7.2	10	12.8
	Head pressure (kPA)	1206	1247	1290	1336	1383	143
18.3	Capacity (kW)	27.7	30.4	33.3	36.2	39.2	42
	OD Unit Power (kW)	6.26	6.41	6.57	6.74	6.93	7.1
	Head pressure (kPA)	1382	1425	1470	1518	1568	162
23.9	Capacity (kW)	26.5	29.0	31.7	34.4	37.3	40.
	OD Unit Power (kW)	6.92	7.08	7.25	7.44	7.64	7.8
	Head pressure (kPA)	1576	1622	1670	1721	1774	182
29.4	Capacity (kW)	25.1	27.5	30.0	32.7	35.4	38.
	OD Unit Power (kW)	7.70	7.88	8.07	8.27	8.49	8.7
	Head pressure (kPA)	1788	1837	1888	1941	1997	205
35.0	Capacity (kW)	23.6	25.9	28.3	30.9	33.5	36
	OD Unit Power (kW)	8.60	8.79	9.00	9.22	9.44	9.6
	Head pressure (kPA)	2017	2069	2124	2181	2240	230
40.6	Capacity (kW)	22.1	24.3	26.6	29.0	31.5	34
	OD Unit Power (kW)	9.60	9.82	10.05	10.28	10.51	10.
	Head pressure (kPA)	2265	2321	2379	2440	2502	256
46.1	Capacity (kW)	20.5	22.7	24.9	27.2	29.5	31.
	OD Unit Power (kW)	10.72	10.96	11.21	11.45	11.69	11.9



(TWA155A)

OD Temp			Suct	ion Referen	ce Tempera	ture °F	
°F		30	35	40	45	50	55
	Head press PSIG	165	170	176	182	188	195
65	Cap. Btuh/1000	137.2	151.6	166.8	182.4	198.5	214.9
	OD Unit KW	9.13	9.33	9.54	9.77	10.02	10.27
	Head press PSIG	191	197	203	209	215	222
75	Cap. Btuh/1000	133.6	147.5	161.8	176.6	191.6	207.0
	OD Unit KW	10.06	10.29	10.52	10.77	11.02	11.29
	Head press PSIG	219	225	232	238	245	252
85	Cap. Btuh/1000	128.5	141.7	155.4	169.3	183.6	198.1
	OD Unit KW	11.16	11.40	11.65	11.91	12.18	12.46
	Head press PSIG	250	256	263	270	277	284
95	Cap. Btuh/1000	122.2	134.7	147.6	160.8	174.3	188.1
	OD Unit KW	12.43	12.68	12.94	13.20	13.47	13.75
	Head press PSIG	283	289	296	304	311	319
105	Cap. Btuh/1000	114.9	126.7	138.8	151.2	164.0	177.1
	OD Unit KW	13.85	14.10	14.35	14.61	14.89	15.17
	Head press PSIG	318	325	332	340	347	355
115	Cap. Btuh/1000	106.7	117.7	129.1	140.8	152.9	165.4
	OD Unit KW	15.41	15.65	15.89	16.15	16.42	16.70

Table PD-7	<ul> <li>Gross Cooling Perform</li> </ul>	nance (KW)	TWA155	A Heat Pu	np Only		
OD Temp			Suct	ion Referen	ce Tempera	ture °C	
°C		-1.1	1.7	4.4	7.2	10.0	12.8
	Head pressure (kPA)	1136	1174	1213	1255	1299	1343
18.3	Capacity (kW)	40.2	44.4	48.8	53.4	58.1	62.9
	OD Unit Power (kW)	9.13	9.33	9.54	9.77	10.02	10.27
	Head pressure (kPA)	1315	1355	1397	1440	1485	1532
23.9	Capacity (kW)	39.1	43.2	47.4	51.7	56.1	60.6
	OD Unit Power (kW)	10.06	10.29	10.52	10.77	11.02	11.29
	Head pressure (kPA)	1510	1552	1597	1642	1690	1738
29.4	Capacity (kW)	37.6	41.5	45.5	49.6	53.8	58.0
	OD Unit Power (kW)	11.16	11.40	11.65	11.91	12.18	12.46
	Head pressure (kPA)	1722	1767	1813	1860	1909	1960
35.0	Capacity (kW)	35.8	39.5	43.2	47.1	51.0	55.1
	OD Unit Power (kW)	12.43	12.68	12.94	13.20	13.47	13.75
	Head pressure (kPA)	1949	1996	2044	2093	2145	2197
40.6	Capacity (kW)	33.6	37.1	40.6	44.3	48.0	51.9
	OD Unit Power (kW)	13.85	14.10	14.35	14.61	14.89	15.17
	Head pressure (kPA)	2192	2241	2291	2342	2395	2451
46.1	Capacity (kW)	31.2	34.5	37.8	41.2	44.8	48.4
	OD Unit Power (kW)	15.41	15.65	15.89	16.15	16.42	16.70



(TWA200A)

Table PD-8	- Gross Cooling Performa	ance (MBh)	TWA20	00A Heat Pu	ımp Only		
OD Temp			Suc	tion Referen	ce Tempera	ture °F	
°F		30	35	40	45	50	55
	Head press PSIG	177	183	189	196	203	210
65	Cap. Btuh/1000	187.4	205.7	224.7	244.4	264.7	285.6
	OD Unit KW	12.50	12.81	13.14	13.49	13.86	14.25
	Head press PSIG	203	209	216	223	230	238
75	Cap. Btuh/1000	178.8	196.0	213.9	232.6	252.1	272.1
	OD Unit KW	13.84	14.17	14.53	14.91	15.32	15.75
	Head press PSIG	231	238	245	253	260	269
85	Cap. Btuh/1000	169.4	185.8	203.0	220.8	239.3	258.4
	OD Unit KW	15.42	15.79	16.18	16.60	17.04	17.49
	Head press PSIG	262	269	277	285	293	302
95	Cap. Btuh/1000	159.6	175.3	191.7	208.8	226.4	244.5
	OD Unit KW	17.24	17.65	18.08	18.52	18.98	19.44
	Head press PSIG	296	304	312	320	329	338
105	Cap. Btuh/1000	149.2	164.3	180.1	196.5	213.4	230.6
	OD Unit KW	19.29	19.74	20.20	20.68	21.15	21.62
	Head press PSIG	332	340	349	358	367	377
115	Cap. Btuh/1000	138.5	153.1	168.4	184.1	200.2	216.5
	OD Unit KW	21.55	22.05	22.55	23.05	23.54	24.01

ODTemp			Suc	tion Referer	ceTemperat	ure °C	
°C		-1.1	1.7	4.4	7.2	10.0	12.8
	Head pressure (kPA)	1219	1261	1305	1351	1399	144
18.3	Capacity (kW)	54.9	60.2	65.8	71.5	77.5	83.
	OD Unit Power (kW)	12.50	12.81	13.14	13.49	13.86	14.
	Head pressure (kPA)	1397	1441	1487	1536	1588	164
23.9	Capacity (kW)	52.3	57.4	62.6	68.1	73.8	79.
	OD Unit Power (kW)	13.84	14.17	14.53	14.91	15.32	15.
	Head pressure (kPA)	1593	1640	1689	1741	1796	18
29.4	Capacity (kW)	49.6	54.4	59.4	64.7	70.1	75
	OD Unit Power (kW)	15.42	15.79	16.18	16.60	17.04	17.4
	Head pressure (kPA)	1808	1857	1910	1965	2022	208
35.0	Capacity (kW)	46.7	51.3	56.1	61.1	66.3	71.
	OD Unit Power (kW)	17.24	17.65	18.08	18.52	18.98	19.
	Head pressure (kPA)	2040	2093	2149	2207	2268	232
40.6	Capacity (kW)	43.7	48.1	52.7	57.5	62.5	67.
	OD Unit Power (kW)	19.29	19.74	20.20	20.68	21.15	21.0
	Head pressure (kPA)	2290	2348	2408	2470	2533	259
46.1	Capacity (kW)	40.5	44.8	49.3	53.9	58.6	63.
	OD Unit Power (kW)	21.55	22.05	22.55	23.05	23.54	24.0



(System)

Table PD-9 — Gross Heating Capacities (MBh) TWA075A Heat Pump with TWE075A Air Handler At 2500 CFM

Outdoor	Heati	ng Capacity	/ (BTUH/10	00) At	To	tal Power i	n Kilowatts	At
Temperature	Indicated	d Indoor Dr	y BulbTem	perature	Indicated	d Indoor Dr	y BulbTem	perature
(°F)	60	70	75	80	60	70	75	80
-18	34.9	30.4	28.5	26.9	5.5	5.6	5.7	5.8
-13	35.5	31.5	30.0	28.6	5.5	5.6	5.7	5.9
-8	36.5	33.1	31.8	30.6	5.4	5.6	5.8	5.9
-3	37.9	35.0	34.0	33.2	5.4	5.6	5.8	6.0
2	39.7	37.5	36.7	36.1	5.4	5.7	5.9	6.1
7	42.0	40.3	39.7	39.3	5.4	5.7	6.0	6.2
12	44.8	43.5	43.1	42.9	5.5	5.8	6.1	6.3
17	48.0	47.1	46.9	46.8	5.5	5.9	6.2	6.5
22	51.7	51.1	51.0	50.9	5.6	6.0	6.3	6.6
27	55.8	55.4	55.3	55.3	5.7	6.2	6.4	6.8
32	60.3	60.1	60.0	60.0	5.8	6.3	6.6	6.9
37	65.0	64.8	64.7	64.7	5.9	6.5	6.8	7.1
42	69.9	69.7	69.6	69.5	6.0	6.6	6.9	7.3
47	75.1	74.8	74.7	74.5	6.2	6.8	7.1	7.5
52	80.6	80.2	79.9	79.6	6.3	7.0	7.3	7.6
57	86.2	85.6	85.3	84.9	6.5	7.1	7.5	7.8
62	92.0	91.2	90.8	90.2	6.7	7.3	7.7	8.0
67	97.8	96.8	96.2	95.6	6.9	7.5	7.9	8.2
72	103.7	102.5	101.9	101.2	7.1	7.7	8.1	8.4

Table PD-9 — Gross Heating Capacities (KW) TWA075A Heat Pump with TWE075A Air Handler At 1180 L/S

Outdoor	Н	eating Cap	acity (KW)	At	To	tal Power i	n Kilowatts	At
Temperature	Indicated	d Indoor Dr	y BulbTem	perature	Indicated	d Indoor Dr	y BulbTem	perature
(°C)	15.6	21.1	23.9	26.7	15.6	21.1	23.9	26.7
-27.8	10.2	8.9	8.4	7.9	5.5	6.0	6.2	6.5
-25.0	10.4	9.2	8.8	8.4	5.6	6.1	6.3	6.6
-22.2	10.7	9.7	9.3	9.0	5.7	6.2	6.5	6.7
-19.4	11.1	10.3	10.0	9.7	5.8	6.3	6.6	6.9
-16.7	11.6	11.0	10.7	10.6	5.9	6.5	6.7	7.0
-13.9	12.3	11.8	11.6	11.5	6.0	6.6	6.9	7.2
-11.1	13.1	12.7	12.6	12.6	6.2	6.7	7.0	7.4
-8.3	14.1	13.8	13.7	13.7	6.3	6.9	7.2	7.5
-5.6	15.1	15.0	14.9	14.9	6.5	7.0	7.4	7.7
-2.8	16.3	16.2	16.2	16.2	6.6	7.2	7.5	7.9
0.0	17.7	17.6	17.6	17.6	6.8	7.4	7.7	8.1
2.8	19.0	19.0	19.0	18.9	6.9	7.6	7.9	8.3
5.6	20.5	20.4	20.4	20.3	7.1	7.8	8.1	8.5
8.3	22.0	21.9	21.9	21.8	7.3	8.0	8.4	8.8
11.1	23.6	23.5	23.4	23.3	7.5	8.2	8.6	9.0
13.9	25.2	25.1	25.0	24.9	7.7	8.4	8.8	9.2
16.7	26.9	26.7	26.6	26.4	7.9	8.7	9.1	9.5
19.4	28.6	28.3	28.2	28.0	8.1	8.9	9.3	9.8
22.2	30.4	30.0	29.8	29.6	8.4	9.2	9.6	10.0

Correction Factors - Other Airflows (Table Value x Correction Factor = Value at new airflow)

Airflow 2250 CFM 2750 CFM 1297 L/s 1061 L/s x0.99 x1.02 x 1.01 x 0.98 **Heating Capacity** Compressor Kw

Values at ARI Rating Conditions of: 70F(21.1C) and 47/43F(8.3/6.1C)(High Temp.Cond.) 70F(21.1C) and 17/15F(-8.3/-9.4C)(Low Temp. Cond)

Airflow = 2500 cfm (1179 L/s)

Airtlow = 2500 cfm (1179 L/s)
Heating Capacity (High Temp.) = 75,000 (21.82)
Heating Capacity (Low Temp.) = 47,000 (13.84)
Compressor Power (High Temp) = 5.41 kW
Compressor Power (Low Temp) = 4.55 kW
Coeff. Of Perf. (High Temp) = 3.2
Coeff. Of Perf. (Low Temp) = 2.3
Outdoor Fan Power - 550 watte Outdoor Fan Power = 550 watts Indoor Fan Power = 800 watts

Note: 1. Rated with 25 feet of 1-3/8" suction and 1/2" liquid line.



(System)

Table PD-10 — Gross Heating Capacities (MBh) TWA100A Heat Pump with TWE100A Air Handler At 3325 CFM

Outdoor _	Heati	ng Capacity	/ (BTUH/10	000) At	То	tal Power i	n Kilowatts	At
Temperature	Indicated	d Indoor Dr	y BulbTem	perature	Indicate	d Indoor Dr	y BulbTem	perature
(°F)	60	70	75	80	60	70	75	80
-18	21.9	39.6	43.0	44.8	5.6	7.3	7.9	8.4
-13	33.4	43.6	46.0	47.3	6.2	7.5	8.0	8.5
-8	40.8	47.5	49.2	50.2	6.6	7.6	8.1	8.6
-3	46.7	51.5	52.8	53.4	6.8	7.8	8.2	8.7
2	52.3	55.7	56.5	57.0	7.0	7.9	8.4	8.8
7	57.7	60.1	60.6	60.8	7.2	8.1	8.5	8.9
12	63.2	64.8	65.1	65.1	7.4	8.2	8.6	9.1
17	68.9	69.8	69.9	69.8	7.5	8.4	8.8	9.2
22	74.8	75.1	75.1	74.9	7.7	8.5	9.0	9.4
27	80.9	80.8	80.6	80.3	7.9	8.7	9.1	9.6
32	87.3	86.8	86.5	86.2	8.0	8.9	9.4	9.8
37	93.6	92.9	92.6	92.2	8.2	9.1	9.6	10.1
42	100.2	99.3	98.9	98.5	8.4	9.3	9.8	10.3
47	107.1	106.0	105.6	105.2	8.6	9.5	10.1	10.6
52	114.4	113.2	112.7	112.3	8.8	9.8	10.3	10.9
57	121.9	120.6	120.1	119.7	9.1	10.1	10.6	11.2
62	129.7	128.3	127.8	127.3	9.3	10.4	10.9	11.5
67	137.7	136.2	135.6	135.1	9.6	10.7	11.2	11.9
72	145.9	144.3	143.7	143.2	9.9	11.0	11.6	12.2

Table PD-10 — Gross Heating Capacities (KW) TWA100A Heat Pump with TWE100A Air Handler At 1570 L/S

Outdoor	Н	eating Cap	acity (KW)	At	To	tal Power i	n Kilowatts	At
Temperature	Indicated	d Indoor Dr	y BulbTem	perature	Indicated	d Indoor Dr	y BulbTem	perature
(°C)	15.6	21.1	23.9	26.7	15.6	21.1	23.9	26.7
-27.8	6.4	11.6	12.6	13.1	5.5	6.0	6.2	6.5
-25.0	9.8	12.8	13.5	13.9	5.6	6.1	6.3	6.6
-22.2	11.9	13.9	14.4	14.7	5.7	6.2	6.5	6.7
-19.4	13.7	15.1	15.4	15.6	5.8	6.3	6.6	6.9
-16.7	15.3	16.3	16.6	16.7	5.9	6.5	6.7	7.0
-13.9	16.9	17.6	17.8	17.8	6.0	6.6	6.9	7.2
-11.1	18.5	19.0	19.1	19.1	6.2	6.7	7.0	7.4
-8.3	20.2	20.4	20.5	20.4	6.3	6.9	7.2	7.5
-5.6	21.9	22.0	22.0	21.9	6.5	7.0	7.4	7.7
-2.8	23.7	23.7	23.6	23.5	6.6	7.2	7.5	7.9
0.0	25.6	25.4	25.3	25.2	6.8	7.4	7.7	8.1
2.8	27.4	27.2	27.1	27.0	6.9	7.6	7.9	8.3
5.6	29.3	29.1	29.0	28.8	7.1	7.8	8.1	8.5
8.3	31.3	31.0	30.9	30.8	7.3	8.0	8.4	8.8
11.1	33.5	33.1	33.0	32.9	7.5	8.2	8.6	9.0
13.9	35.7	35.3	35.2	35.0	7.7	8.4	8.8	9.2
16.7	38.0	37.6	37.4	37.3	7.9	8.7	9.1	9.5
19.4	40.3	39.9	39.7	39.6	8.1	8.9	9.3	9.8
22.2	42.7	42.3	42.1	41.9	8.4	9.2	9.6	10.0

Correction Factors - Other Airflows

(Table Value x Correction Factor = Value at new airflow)

3000 CFM 3675 CFM 1416L/s x0.99 1734L/s x1.01 Heating Capacity Compressor Kw x 1.02 x0.98

Values at ARI Rating Conditions of: 70F (21.1C) and 47/43F (8.3/6.1C) (High Temp.Cond.) 70F (21.1C) and 17/15F (-8.3/-9.4C) (Low Temp.Cond)

Airflow = 3325 cfm (1569 L/s) Heating Capacity (High Temp.) = 106,000 (31.05) Heating Capacity (Low Temp.) = 69,000 (20.29) Compressor Power (High Temp) = 7.61 kW Compressor Power (Low Temp) = 6.38 kW Coeff. Of Perf. (High Temp) = 3.30 Coeff. Of Perf. (Low Temp) = 2.4 Outdoor Fan Power = 644 watts Indoor Fan Power = 1,170 watts

1. Rated with 25 feet of 1-3/8" suction and 1/2" liquid line.



(System)

Table PD-11 — Gross Heating Capacities (MBh)
TWA155B Heat Pump with TWE155B Air Handler At 5000 CFM

Outdoor			/ (BTUH/10			tal Power i	n Kilowatts	At
Temperature	Indicated	d Indoor Dr	y BulbTem	perature	Indicated	d Indoor Dr	y BulbTem	perature
(°F)	60	70	75	80	60	70	75	80
-18	69.7	60.9	57.2	54.0	11.1	11.4	11.5	11.8
-13	71.1	63.2	60.2	57.4	11.0	11.3	11.6	11.8
-8	73.1	66.4	63.9	61.6	11.0	11.4	11.6	12.0
-3	76.0	70.4	68.4	66.8	10.9	11.4	11.7	12.1
2	79.8	75.4	73.9	72.7	10.9	11.5	11.9	12.3
7	84.5	81.1	80.0	79.3	11.0	11.6	12.1	12.6
12	90.2	87.7	87.0	86.6	11.1	11.8	12.3	12.8
17	96.7	95.1	94.6	94.4	11.2	12.0	12.5	13.1
22	104.2	103.2	102.9	102.8	11.3	12.2	12.8	13.4
27	112.6	111.9	111.8	111.8	11.5	12.5	13.1	13.7
32	121.8	121.4	121.3	121.3	11.7	12.8	13.4	14.1
37	131.3	131.0	130.8	130.7	12.0	13.1	13.8	14.4
42	141.4	140.9	140.7	140.5	12.3	13.4	14.1	14.8
47	151.9	151.3	151.0	150.6	12.6	13.8	14.5	15.2
52	163.0	162.2	161.6	161.0	12.9	14.1	14.8	15.6
57	174.4	173.3	172.5	171.7	13.2	14.5	15.2	15.9
62	186.2	184.6	183.6	182.6	13.6	14.9	15.6	16.3
67	198.0	196.0	194.8	193.5	14.0	15.3	16.0	16.7
72	210.0	207.6	206.2	204.8	14.4	15.7	16.4	17.1

Table PD-11 — Gross Heating Capacities (KW)
TWA155B Heat Pump with TWE155B Air Handler At 2360 L/S

Outdoor _	H	eating Cap	acity (KW)	At	To	tal Power i	n Kilowatts	At
Temperature	Indicated	d Indoor Dr	y BulbTem	perature	Indicated	d Indoor Di	y BulbTem	perature
(°C)	15.6	21.1	23.9	26.7	15.6	21.1	23.9	26.7
-27.8	20.4	17.8	16.8	15.8	5.5	6.0	6.2	6.5
-25.0	20.8	18.5	17.6	16.8	5.6	6.1	6.3	6.6
-22.2	21.4	19.4	18.7	18.0	5.7	6.2	6.5	6.7
-19.4	22.3	20.6	20.0	19.6	5.8	6.3	6.6	6.9
-16.7	23.4	22.1	21.6	21.3	5.9	6.5	6.7	7.0
-13.9	24.7	23.8	23.4	23.2	6.0	6.6	6.9	7.2
-11.1	26.4	25.7	25.5	25.3	6.2	6.7	7.0	7.4
-8.3	28.3	27.8	27.7	27.6	6.3	6.9	7.2	7.5
-5.6	30.5	30.2	30.1	30.1	6.5	7.0	7.4	7.7
-2.8	33.0	32.8	32.7	32.7	6.6	7.2	7.5	7.9
0.0	35.7	35.5	35.5	35.5	6.8	7.4	7.7	8.1
2.8	38.5	38.3	38.3	38.3	6.9	7.6	7.9	8.3
5.6	41.4	41.3	41.2	41.1	7.1	7.8	8.1	8.5
8.3	44.5	44.3	44.2	44.1	7.3	8.0	8.4	8.8
11.1	47.7	47.5	47.3	47.2	7.5	8.2	8.6	9.0
13.9	51.1	50.7	50.5	50.3	7.7	8.4	8.8	9.2
16.7	54.5	54.0	53.8	53.5	7.9	8.7	9.1	9.5
19.4	58.0	57.4	57.0	56.7	8.1	8.9	9.3	9.8
22.2	61.5	60.8	60.4	60.0	8.4	9.2	9.6	10.0

Correction Factors - Other Airflows" (Table Value Correction Factor = Value at new airflow)
Airflow 4500 CFM 5500 CFM"
2124 L/s 2596 L/s

Values at ARI Rating Conditions of: 70F (21.1C) and 47/43F (8.3/6.1C) (High Temp.Cond.) 70F (21.1C) and 17/15F (-8.3/-9.4C) (Low Temp.Cond) Airflow = 5000 cfm (2360 L/s)
Heating Capacity (High Temp.) = 151,000 (44.27)
Heating Capacity (Low Temp.) = 95,000 (27.67)
Compressor Power (High Temp) = 10.94 kW
Compressor Power (Low Temp) = 9.18 kW
Coeff. Of Perf. (High Temp) = 3.2
Coeff. Of Perf. (Low Temp) = 2.3
Outdoor Eap Power = 1100 water

Outdoor Fan Power = 1700 watts Indoor Fan Power = 1700 watts

Note:

1.Rated with 25 feet of 1-3/8"" suction and 1/2"" liquid line."



(System)

Table PD-12 — Gross Heating Capacities (MBh)
TWA200B Heat Pump with TWE200B Air Handler At 6675 CFM

I WAZUUB Heat	rump w	ith i vvEZ	UUD AIF I	andier At 6	6/5 CFIVI			
Outdoor	Heati	ng Capacity	/ (BTUH/10	00) At	To	tal Power i	n Kilowatts	At
Temperature	Indicated	d Indoor Dr	y BulbTem	perature	Indicated	d Indoor Dr	y BulbTem	perature
(°F)	60	70	75	80	60	70	75	80
-18	43.5	80.3	85.7	88.4	10.8	14.5	15.6	16.5
-13	68.9	87.1	91.0	93.0	12.3	14.8	15.8	16.7
-8	82.3	94.2	97.0	98.4	13.0	15.1	16.0	16.8
-3	93.2	101.6	103.6	104.5	13.4	15.3	16.2	17.1
2	103.5	109.4	110.8	111.3	13.8	15.6	16.4	17.3
7	113.7	117.8	118.6	118.8	14.1	15.8	16.7	17.6
12	124.2	126.8	127.2	127.1	14.5	16.1	17.0	17.9
17	135.0	136.4	136.5	136.1	14.8	16.4	17.3	18.2
22	146.2	146.7	146.5	146.0	15.1	16.7	17.6	18.5
27	157.9	157.6	157.2	156.6	15.4	17.1	18.0	18.9
32	170.2	169.3	168.8	168.1	15.7	17.4	18.4	19.4
37	182.4	181.2	180.5	179.8	16.0	17.8	18.8	19.8
42	195.1	193.5	192.7	192.0	16.4	18.2	19.2	20.3
47	208.4	206.5	205.7	205.0	16.7	18.6	19.7	20.8
52	222.4	220.3	219.4	218.7	17.2	19.1	20.2	21.3
57	236.9	234.6	233.6	232.9	17.6	19.6	20.7	21.9
62	251.7	249.2	248.2	247.4	18.1	20.1	21.2	22.4
67	266.7	264.0	262.9	262.1	18.5	20.6	21.8	23.0
72	282.3	279.4	278.2	277.2	19.1	21.2	22.4	23.7

Table PD-12 — Gross Heating Capacities (KW) TWA200B Heat Pump with TWE200B Air Handler At 3150 L/S

Outdoor	Н	eating Cap	acity (KW)	At	To	tal Power i	n Kilowatts	At
Temperature	Indicated	d Indoor Dr	y BulbTem	perature	Indicated	d Indoor Dr	y BulbTem	perature
(°C)	15.6	21.1	23.9	26.7	15.6	21.1	23.9	26.7
27.8	12.7	23.5	25.1	25.9	5.5	6.0	6.2	6.5
-25.0	20.2	25.5	26.6	27.2	5.6	6.1	6.3	6.6
-22.2	24.1	27.6	28.4	28.8	5.7	6.2	6.5	6.7
-19.4	27.3	29.7	30.3	30.6	5.8	6.3	6.6	6.9
-16.7	30.3	32.0	32.4	32.6	5.9	6.5	6.7	7.0
-13.9	33.3	34.5	34.7	34.8	6.0	6.6	6.9	7.2
-11.1	36.4	37.1	37.2	37.2	6.2	6.7	7.0	7.4
-8.3	39.5	39.9	40.0	39.9	6.3	6.9	7.2	7.5
-5.6	42.8	42.9	42.9	42.7	6.5	7.0	7.4	7.7
-2.8	46.2	46.2	46.0	45.9	6.6	7.2	7.5	7.9
0.0	49.8	49.6	49.4	49.2	6.8	7.4	7.7	8.1
2.8	53.4	53.0	52.8	52.6	6.9	7.6	7.9	8.3
5.6	57.1	56.7	56.4	56.2	7.1	7.8	8.1	8.5
8.3	61.0	60.5	60.2	60.0	7.3	8.0	8.4	8.8
11.1	65.1	64.5	64.3	64.0	7.5	8.2	8.6	9.0
13.9	69.4	68.7	68.4	68.2	7.7	8.4	8.8	9.2
16.7	73.7	73.0	72.7	72.4	7.9	8.7	9.1	9.5
19.4	78.1	77.3	77.0	76.7	8.1	8.9	9.3	9.8
22.2	82.7	81.8	81.5	81.2	8.4	9.2	9.6	10.0

Correction Factors - Other Airflows

(Table Value x Correction Factor = Value at new airflow)

6000 CFM 7325 CFM 3457 L/s x 1.01 2832 L/s Heating Capacity Compressor Kw x0.99 x 1.02

Values at ARI Rating Conditions of: 70F (21.1C) and 47/43F (8.3/6.1C) (High Temp.Cond.) 70F (21.1C) and 17/15F (-8.3/-9.4C) (Low Temp. Cond)

Airflow = 6700 cfm (3162 L/s)

Heating Capacity (High Temp.) = 206,000 (60.26)
Heating Capacity (Low Temp.) = 135,000 (39.66)
Compressor Power (High Temp) = 14.92 kW
Compressor Power (Low Temp) = 12.62 kW
Coeff. Of Perf. (High Temp) = 3.2
Coeff. Of Perf. (Low Temp) = 2.4

Outdoor Fan Power = 1,100 watts Indoor Fan Power = 2,290 watts

Note: 1. Rated with 25 feet of 1-3/8" suction and 1/2" liquid line."



(Air Handler)

#### Table PD-13 — Evaporator Fan Performance — TWE050A

100.01			.p 0							•												
							Ex	terna	l Stati	c Pres	sure	(Inche	s of V	Vater	Gaug	e)						
	.1	0"	.2	0"	.3	0"	.4	0"	.5	0"	.6	0"	.7	0"	.80	)"	.9	0"	1.0	00"	1.1	0"
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	0.75 HP Standard Motor and Drive																					
1400	_	_	_	_	646	0.37	698	0.42	751	0.47	803	0.52	856	0.56	908	0.61	941	0.65	973	0.68	1006	0.71
1500	_	_	607	0.36	661	0.40	713	0.45	764	0.50	816	0.54	867	0.59	919	0.64	952	0.67	984	0.71	_	_
1600	_	_	625	0.38	676	0.43	727	0.48	778	0.52	828	0.57	879	0.62	930	0.67	963	0.70	995	0.74	_	_
1700	601	0.35	648	0.40	696	0.44	744	0.49	792	0.54	841	0.59	889	0.64	937	0.69	971	0.73	1005	0.77	_	_
1800	625	0.36	671	0.41	716	0.46	762	0.51	807	0.56	853	0.61	898	0.66	944	0.71	979	0.76	_	_	_	_
1900	642	0.40	687	0.45	731	0.50	776	0.55	820	0.60	865	0.66	909	0.71	951	0.75	987	0.80	_	_	_	_
2000	659	0.44	703	0.49	745	0.54	790	0.60	833	0.65	877	0.70	920	0.75	957	0.80	994	0.84	_	_	_	_
2100	674	0.48	722	0.54	770	0.60	817	0.65	857	0.70	897	0.75	936	0.80	973	0.85	1009	0.89	_	_	_	_
		1.0 HP Oversi											Vloto	rand	High	Stati	c Driv	ve				

#### Table PD-13 — Evaporator Fan Performance — TWE050A

							Ex	terna	Stat	ic Pre	ssure	(Pas	cal)									
	2	5	5	0	7	5	10	00	1:	25	1!	50	1	74	19	9	22	24	24	19	27	74
L/S	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	BHP	RPM	BHP	RPM	KW	RPM	KW	RPM	KW
			0.	56 St	anda	rd M	otor	and l	Drive	,												
661					646	0.28	698	0.31	751	0.35	803	0.39	856	0.42	908	0.45	941	0.48	973	0.51	1006	0.53
708			607	0.27	661	0.30	713	0.34	764	0.37	816	0.40	867	0.44	919	0.48	952	0.50	984	0.53	_	_
755			625	0.28	676	0.32	727	0.36	778	0.39	828	0.43	879	0.46	930	0.50	963	0.52	995	0.55	_	_
802	601	0.26	648	0.30	696	0.33	744	0.37	792	0.40	841	0.44	889	0.48	937	0.51	971	0.54	1005	0.57	] —	_
850	625	0.27	671	0.31	716	0.34	762	0.38	807	0.42	853	0.45	898	0.49	944	0.53	979	0.57	_	_	_	_
897	642	0.30	687	0.34	731	0.37	776	0.41	820	0.45	865	0.49	909	0.53	951	0.56	987	0.60	_	_	_	_
944	659	0.33	703	0.37	745	0.40	790	0.45	833	0.48	877	0.52	920	0.56	957	0.60	994	0.67	_	_	_	— ·
991	674	0.36	722	0.40	770	0.45	817	0.48	857	0.52	897	0.56	936	0.60	973	0.63	1009	0.66	_	_	_	_
	0.75 KW Oversized Motor and High													ıh Sta	atic D	rive						

- Notes:

  1. Performance based on a wet coil and 1 inch (25.4 mm) throwaway filters.

  2. Tabulated brake horsepower is the motor shaft output required.

  3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

Table PD-14 — Blower Speeds

		Motor DriveTurns Open											
Drive	6	5	4	3	2	1	0						
Standard	N/A	590	639	688	737	786	835						
High Static	N/A	713	772	832	891	951	1009						



(Air Handler)

Table PD-15 — Evaporator Fan Performance TWE075A

	External Static Pressure (In. Of Water Column)																					
	0.	10	0.	20	0.	30	0.	40	0.	50	0.	60	0.	70	0.8	0	0.	90	1.	00	1.	10
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2000			443	0.44	489	0.49	535	0.54	581	0.59	627	0.64	673	0.69	719	0.74	765	0.79	791	0.83	818	0.89
2125	453 0.46 499 0.52 546 0.57 <u>592 0.63</u> 638 0.68 684 0.74 730 0.79									771	0.85	798	0.90	825	0.96							
2250			463	0.49	510	0.55	556	0.61	602	0.67	649	0.73	695	0.79	742	0.85	776	0.91	804	0.97	831	1.03
2375			473	0.51	520	0.57	567	0.64	613	0.70	660	0.77	706	0.83	753	0.90	782	0.97	810	1.03	838	1.10
2500	445	0.47	489	0.54	533	0.60	578	0.67	622	0.73	667	0.80	711	0.86	756	0.93	784	0.99	813	1.07	842	1.14
2625	464	0.50	506	0.57	548	0.63	589	0.69	631	0.76	672	0.82	714	0.88	757	0.95	786	1.01	815	1.09	844	1.17
2750	484	0.53	523	0.59	562	0.66	601	0.72	640	0.78	678	0.84	717	0.91	758	0.97	787	1.03	817	1.12	847	1.21
2875	504	0.56	540	0.62	576	0.68	612	0.74	648	0.81	684	0.87	720	0.93	759	0.99	789	1.05	819	1.15	850	1.24
3000	524	0.59	557	0.65	590	0.71	624	0.77	657	0.83	690	0.89	723	0.95	760	1.01	<u>790</u>	1.07	821	1.17	853	1.27
	1.0 HP Standard Motor 1.0 HP Standard Motor												1.5	нр о	versi	zed I	Votor					
	an	d Lo	w Sta	atic C	Prive					and H	igh S	tatic	Drive					and l	High \$	Statio	Driv	е

- Notes:

  1. Performance based on a wet coil and 1 inch (25.4 mm) throwaway filters.

  2. Tabulated brake horsepower is the motor shaft output required.

  3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

#### Table PD-15 — Continued

	Ex	ternal	Stati	c Pres	sure	(In. O	Wate	r Col	umn)					
	12	20	1.3	30	1.4	40	1.	50	1.0	60				
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP				
2000	844	0.96	871	1.02	897	1.09	924	1.15	950	1.21				
2125	852	1.03	879	1.09	906	1.16	933	1.22						
2250	859	1.10	886	1.17	914	1.23	942	1.30						
2375	866			1.24	922	1.30	950	1.37						
2500	870	1.21	899	1.29	928	1.36								
2625	874	1.25	903	1.33	932	1.42								
2750	877	1.29	907	1.38	937	1.47								
2875	880	1.33	911	1.43	942	1.52								
3000	884	1.37	915	1.48	946	1.58								

#### Table PD-15 — Evaporator Fan Performance TWE075A

External Static Pressure (Pascal)

	2	5	5	0	7	5	10	00	12	25	15	50	17	74	19	9	22	24	24	19	2	74
L/S	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW
944			443	0.33	489	0.37	535	0.40	581	0.44	627	0.48	673	0.51	719	0.55	765	0.59	791	0.62	818	0.66
1003			453	0.34	499	0.39	546	0.43	592	0.47	638	0.51	684	0.55	730	0.59	771	0.63	798	0.67	825	0.72
1062			463	0.37	510	0.41	556	0.45	602	0.50	649	0.54	695	0.59	742	0.63	776	0.68	804	0.72	831	0.77
1121							567	0.48	613	0.52	660	0.57	706	0.62	753	0.67	782	0.72	810	0.77	838	0.82
1180	0 445 0.35 489 0.40 533 0						578	0.50	622	0.54	667	0.60	711	0.64	756	0.69	784	0.74	813	0.80	842	0.85
1239	464	0.37	506	0.43	548	0.47	589	0.51	631	0.57	672	0.61	714	0.66	757	0.71	786	0.75	815	0.81	844	0.87
1298	484	0.40	523	0.44	562	0.49	601	0.54	640	0.58	678	0.63	717	0.68	758	0.72	787	0.77	817	0.84	847	0.90
1357	504	0.42	540	0.46	576	0.51	612	0.55	648	0.60	684	0.65	720	0.69	759	0.74	789	0.78	819	0.86	850	0.92
1416	02-1	0.44	007	0.48		0.53	624	0.57	657	0.62		0.66	,	0.71	760	0.75	<u>790</u>	0.80	821	0.87	853	0.95
	.75 KW Standard Motor								-				d Mo				-					Vlotor
	and High Static Drive								ē	and H	ligh S	Statio	: Driv	re			a	nd Hi	gh St	atic D	rive	

- Notes:

  1. Performance based on a wet coil and 1 inch (25.4 mm) throwaway
- Tabulated brake horsepower is the motor shaft output required.
   Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

#### Table PD-15 — Continued

	Ex	ternal	Stati	c Pres	sure	(Pasc	al)		
29	99	32	24	34	19	37	74	39	98
RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW
844	0.72	871	0.76	897	0.81	924	0.86	950	0.90
852	0.77	879	0.81	906	0.87	933	0.91		
859	0.82	886	0.87	914	0.92	942	0.97		
866	0.87	894	0.92	922	0.97	950	1.02		
870	0,90	899	0.96	928	1.01				
874	0.93	903	0.99	932	1.06				
877	0.96	907	1.03	937	1.10				
880	0.99	911	1.07	942	1.13				
884	1.02	915	1.10	946	1.18				
	844 852 859 866 870 874 877 880	299 RPM KW 844 0.72 852 0.77 859 0.82 866 0.87 870 0,90 874 0.93 877 0.96 880 0.99	299 32 RPM KW RPM 844 0.72 871 852 0.77 879 859 0.82 886 866 0.87 894 870 0,90 899 874 0.93 903 877 0.96 907 880 0.99 911	299 324 RPM KW RPM KW 844 0.72 871 0.76 852 0.77 879 0.81 859 0.82 886 0.87 866 0.87 894 0.92 870 0.90 899 0.96 874 0.93 903 0.99 877 0.96 907 1.03 880 0.99 911 1.07	299         324         34           RPM         KW         RPM         KW         RPM           844         0.72         871         0.76         897           852         0.77         879         0.81         906           859         0.82         886         0.87         914           866         0.87         894         0.92         922           870         0,90         899         0.96         928           874         0,93         903         0.99         932           877         0,96         907         1.03         937           880         0.99         911         1.07         942	299         324         349           RPM         KW         RPM         KW         RPM         KW           844         0.72         871         0.76         897         0.81           852         0.77         879         0.81         906         0.87           859         0.82         886         0.87         914         0.92           866         0.87         894         0.92         922         0.97           870         0,90         899         0.96         928         1.01           874         0.93         909         9.99         932         1.06           877         0.96         907         1.03         937         1.10           880         0.99         911         1.07         942         1.13	RPM   KW   RPM   KW   RPM   KW   RPM   R	RPM         KW         RPM         KW         RPM         KW         RPM         KW           844         0.72         871         0.76         897         0.81         924         0.86           852         0.77         879         0.81         906         0.87         933         0.91           859         0.82         886         0.87         914         0.92         942         0.97           866         0.87         894         0.92         922         0.97         950         1.02           870         0.90         899         0.96         928         1.01	299         324         349         374         38           RPM         KW         RPM         RW         RPM         RW         RPM         RW         RPM         RW         RPM         RPM         RW         RPM         RW         RPM         RPM<

#### Table PD-16 — Blower Speeds

			poodo					
		N	Notor D	riveTurr	ıs Open			
Drive	6	5	4	3	2	1	0	
Standard	N/A	600	650	700	750	800	850	
Low Static High Static	N/A N/A	428 700	464 750	499 800	535 850	571 900	606 950	



(Air Handler)

Table PD-17 — Evaporator Fan Performance TWE100A, TWE100B

							Ex	ternal	Stati	c Pre	ssure	(In. C	of Wa	ter Co	lumn	)						
	0.	10	0.	20	0.	30	0.	40	0.	50	0.	60	0.	70	0.8	0	0.	90	1.	00	1.:	20
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2600	460	0.32	493	0.39	527	0.47	565	0.55	603	0.63	641	0.71	679	0.79	717	0.87	744	0.94	772	1.01	826	1.16
2775	473	0.37	506	0.45	540	0.53	576	0.61	613	0.69	649	0.77	686	0.85	723	0.93	748	1.00	775	1.07	830	1.20
2950	487														0.99	751	1.06	779	1.12	833	1.25	
3125	501	0.49														1.05	755	1.11	783	1.18	737	1.30
3300	520	0.58	548	0.65	581	0.73	613	0.81	644	0.89	677	0.98	710	1.06	740	1.13	759	1.19	787	1.25	841	1.37
3475	<b>⊿</b> 541	0.69	568	0.76	600	0.84	631	0.93	658	1.00	691	1.08	721	1.16	746	1.21	764	1.28	793	1.34	846	1.48
3650	<b>7</b> 562	0.82	588	0.88	618	0.97	648	1.05	671	1.11	703	1.19	732	1.27	753	1.31	772	1.38	801	1.45	853	1.59
3825 /	<u>582</u>	0.96	608	1.03	637	1.11	666	1.20	685	1.26	711	1.31	739	1.38	763	1.44	787	1.51	815	1.58	862	1.74
4000 /	602	1.11	628	<u>1</u> .17	656	1.26	683	1.35	698	1.40	720	1.43	747	1.50	773	1.58	801	1.64	829	1.71	872	1.89
	P Stan			- 1			-	.5 HF		ndar	d Mo	tor										lotor
and L	.ow St	atic	Drive	•			а	nd Dr	ive									and F	ligh S	tatic	Drive	9

- Performance based on a wet coil and 1 inch (25.4 mm) throwaway filters.
- Tabulated brake horsepower is the motor shaft output required.
- Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.
- 4. Low Static Drive must be field supplied.

#### Table PD-17— Continued

Externa				(In. Of Water Column)
	1.4	40	1.	60
CFM	RPM	BHP	RPM	BHP
2600	881	1.30	936	1.45
2775	884	1.36	938	1.51
2960	886	1.41	939	1.57
3125	889	1.47	941	1.64
3300	892	1.54	945	1.73
3475	897	1.63	950	1.85
3650	902	1.73	955	1.99
3825	912	1.89	960	2.18
4000	922	2.04	965	2.30

Table PD-17— Evaporator Fan Performance TWE0100A, TWE100B

							Ex	ternal	Stati	ic Pre	ssure	(Pas	cal)									
	2	5	5	0	7	5	10	00	12	25	15	50	17	74	19	9	22	24	24	19	27	74
L/S	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW	RPM	KW_
1227	460	0.24	493	0.29	527	0.35	565	0.41	603	0.47	641	0.53	679	0.59	717	0.65	744	0.70	772	0.75	826	0.87
1310	473	0.28	576	0.34	613	0.40	649	0.45	686	0.51	723	0.57	748	0.63	775	0.69	830	0.75	884	0.80	938	0.89
1392	487	0.32	519	0.37	552	0.43	587	0.50	623	0.56	658	0.62	693	0.68	728	0.74	751	0.79	779	0.84	833	0.93
1475															0.78	755	0.83	783	0.88	737	0.97	
1557															0.84	759	0.89	787	0.93	841	1.02	
1640	<b>∡</b> 541	0.51	568	0.57	600	0.63	631	0.69	658	0.75	691	0.80	721	0.87	746	0.90	764	0.95	793	1.00	846	1.10
1723	7 562	0.61	588	0.66	618	0.72	648	0.78	671	0.83	703	0.89	732	0.95	753	0.98	772	1.03	801	1.08	853	1.19
1805 /	582	0.72	608	0.77	637	0.83	666	0.89	685	0.94	711	0.98	739	1.03	763	1.07	787	1.13	815	1.18	862	1.30
1888/	602	0.83	628	0.87	656	0.94	683	1.01	698	1.04	720	1.07	747	1.12	773	1.18	801	1.22	829	1.28	872	1.41
.75 K	N Star	ndard	Mote	or					1.1	2 KW	/ Sta	ndaro	i									/lotor
and L	ow St	atic	Drive						Mot	or ar	nd Dr	ive					a	nd Hi	gh St	atic D	rive	

- Notes:
  1. Performance based on a wet coil and 1 inch (25.4 mm) throwaway
- Tabulated brake horsepower is the motor shaft output required.
   Factory setting of motor sheave is 3.0 turns open. Adjustments are
- made in 0.5 turn increments.

  4. Low Static Drive must be field supplied.

#### Table PD-17— Continued

	34		39	(Pasca 98	
L/S	RPM	KW	RPM	KW	
1227	881	0.97	936	1.08	
1310	506	1.01	540	1.13	
1392	886	1.05	939	1.17	
1475	889	1.10	941	1.22	
1557	892	1.15	945	1.29	
1640	897	1.22	950	1.38	
1723	902	1.29	955	1.48	
1805	912	1.41	960	1.63	
1888	922	1.52	965	1.72	

#### Table PD - 18 — Blower Speeds

	-		Pood	•				
		М	otor Sh	eave Tui	ns Ope	n		
Drive	6	5	4	3	2	1	0	
Standard	N/A	587	629	671	713	755	796	
Low Static	N/A	453	485	518	550	583	615	
High Static	N/A	606	641	677	713	748	784	



(Air Handler)

#### Table PD-19 — Evaporator Fan Performance — TWE155B

								Ex	terna	l Stati	ic Pre	ssure	(Inch	es of	Wate	r Colu	ımn)							
	.1	0"	.2	0"	.3	80"	.4	.0"	.5	0"	.6	0"	.7	0"	.80	)"	.9	0"	1.	00"	1.3	20"	1	40
CFM	RPM		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
			2.0	0 HP S	Stanc	dard N	/loto:	and I	Drive										3.	0 HP (	Overs	ized	Moto	r
																			an	ıd Hig	h Sta	tic D	rive	
4000	628	1.34	653	1.38	678	1.43	692	1.48	708	1.52	723	1.57	738	1.60	749	1.61	759	1.62	<b>」795</b>	1.66	851	1.85	907	2.03
4250	633	1.37	658	1.41	683	1.46	697	1.51	713	1.55	728	1.60	743	1.62	751	1.63	770	1.64	806	1.71	862	1.90	918	2.11
4500	637	1.40	662	1.44	687	1.49	701	1.53	717	1.58	732	1.63	747	1.64	754	1.65	782	1.67	817	1.76	873	1.96	929	2.19
4750	641	1.42	666	1.50	691	1.53	705	1.61	721	1.63	736	1.65	751	1.66	765	1.67	793	1.72	828	1.81	884	2.01	940	2.27
5000	645	1.44	670	1.52	695	1.56	710	1.65	725	1.67	739	1.68	758	1.70	777	1.74	806	1.81	839	1.91	896	2.13		
5260	650	1.46	675	1.53	700	1.59	716	1.67	728	1.70	741	1.73	765	1.75	790	1.82	819	1.92	849	2.03	907	2.28		
5500	652	1.47	678	1.55	703	1.63	721	1.71	734	1.75	747	1.78	775	1.83	804	1.92	832	2.03	861	2.15	920	2.44		
5750	653	1.48	680	1.57	706	1.68	726	1.76	743	1.81	761	1.86	789	1.94	817	2.04	846	2.16	875	2.29	935	2.61		
6000	655	1.49	681	1.59	709	1.74	731	1.80	752	1.87	774	1.94	803	2.05	831	2.17	860	2.29	889	2.44	950	2.78		

#### Table PD-19 — Evaporator Fan Performance TWE155B

								Ex	terna	Stati	c Pres	sure	(Pasc	al)										
	2	5	5	60	7	75	1	00	1:	25	1!	50	1	74	19	9	2	24	2	49	2	99	3	49
L/S	RPM		RPM	KW	RPM	KW	RPM	KW	RPM		RPM		RPM	BHP	RPM	BHP	RPM		RPM		RPM		RPM	
		1.4	49 KV	V Sta	ndaro	d Mot	or an	d Driv	e Sy:	stem									2.:	24 KV	V Ove	rsize	d Mo	tor
														an	ıd Hig	h Sta	tic Dı	rive S	ystem					
1888	628	1.00	653	1.03	678	1.07	692	1.10	708	1.13	723	1.17	738	1.19	749	1.20	759	1.21	795	1.24	851	1.38	907	1.51
2006	633	1.02	658	1.05	683	1.09	697	1.13	713	1.16	728	1.19	743	1.21	751	1.22	770	1.22	806	1.28	862	1.42	918	1.57
2124	637	1.04	662	1.07	687	1.11	701	1.14	717	1.18	732	1.22	747	1.23	754	1.23	782	1.25	817	1.31	873	1.46	929	1.63
2242	641	1.06	666	1.12	691	1.14	705	1.20	721	1.22	736	1.23	751	1.24	765	1.25	793	1.28	828	1.35	884	1.50	940	1.69
2360	645	1.07	670	1.13	695	1.16	710	1.23	725	1.25	739	1.25	758	1.27	777	1.30	806	1.35	839	1.42	896	1.59		
2482	650	1.09	675	1.14	700	1.19	716	1.25	728	1.27	741	1.29	765	1.30	790	1.36	819	1.43	849	1.51	907	1.70		
2596	652	1.10	678	1.16	703	1.22	721	1.28	734	1.30	747	1.33	775	1.36	804	1.43	832	1.51	861	1.60	920	1.82		
2714	653	1.10	680	1.17	706	1.25	726	1.31	743	1.30	761	1.39	789	1.45	817	1.52	846	1.61	875	1.71	935	1.95		
2832	655	1.11	681	1.19	709	1.30	731	1.34	752	1.35	774	1.45	803	1.53	831	1.62	860	1.71	889	1.82	950	2.07		

- Performance based on a wet coil and 2 inch (51 mm) throwaway filters.
   Tabulated brake horsepower is the motor shaft output required.
   Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

Table PD-20 — Blower Speeds

	<u>-</u>		Motor S	heave Turns	Open .		
Drive	6	5	4	3	2	1	0
Standard	619	648	677	705	734	763	N/A
High Static	777	806	835	863	892	921	950



(Air Handler)

#### Table PD-21 — Evaporator Fan Performance TWE200B

	External									c Pre	ssure	(In. C	of Wa	ter Co	lumn	)								
	0.	10	0.	20	0.	30	0.	40	0.	50	0.	60	0.	70	0.8	0	0.	90	1.	00	1.	20	14	40
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5200			461	0.74	503	0.91	545	1.07	587	1.03	619	1.17	685	1.40	723	1.59	750	1.74	777	1.89	851	2.19	898	2.39
5525			479	0.88	521	1.04	563	1.21	605	1.21	640	1.35	701	1.58	739	1.77	766	1.92	793	2.07	859	2.37	906	2.60
5850			497	1.01	539	1.18	581	1.34	623	1.39	661	1.53	717	1.76	755	1.95	782	2.10	809	2.25	868	2.55	915	2.81
6175	473 0.99 515 1.15 <u>557 1.31</u> 599								641	1.57	682	1.71	732	1.94	769	2.12	796	2.27	823	2.43	877	2.73	924	3.02
6500	492	1.12	534	1.28	576	1.45	618	1.61	660	1.75	702	1.90	748	2.12	784	2.30	811	2.45	838	2.60	886	2.91	933	3.22
6825	510	1.25	552	1.42	594	1.59	636	1.75	678	1.91	723	2.10	763	2.30	794	2.47	820	2.62	846	2.77	894	3.09	941	3.42
7150	528	1.38	570	1.56	612	1.73	654	1.90	697	2.07	744	2.30	779	2.49	804	2.64	830	2.78	855	2.94	903	3.26	950	3.62
7475	550	1.61	594	1.77	640	1.92	683	2.08	721	2.29	760	2.50	790	2.67	815	2.81	840	2.96	865	3.11	914	3.47	959	3.85
7800	572	1.83	618	1.97	668	2.10	712	2.27	746	2.52	776	2.69	802	2.84	826	2.99	851	3.13	876	3.27	926	3.67	969	4.08
3.0 Sta	Standard 3.0 HP Standard																							
Motor	motor and riola cappiloa												5 HP	Ove	rsized	toM t	or							
Low St	atic Drive Low Static Drive											and	High	Stati	c Driv	/e								

- Notes:

  1. Performance based on a wet coil and 2 inch (51 mm) throwaway filters.

  2. Tabulated brake horsepower is the motor shaft output required.
- 3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

#### Table PD-21 — Continued

		••••		-							
External Static Pressure (In. Of Water Column)											
	1.	60	1.8	80							
CFM	RPM	BHP	RPM	BHP							
5200	944	2.75	989	3.12							
5525	952	2.96	997	3.33							
5850	961	3.17	1006	3.54							
5175	970	3.38	1015	3.75							
8500	978	3.59	1023	3.96							
8825	986	3.80									
7150	994	4.01									
7475	1003	4.25									
7800	1012	4.50									

#### Table PD-21 - Evaporator Fan Performance TWE200B

							Ex	ternal	Stati	c Pres	ssure	(Pasc	al)											
	25 50 75 100 125 150 174 199 224 249 299 349													49										
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2454			461	0.55	503	0.68	545	0.80	587	0.77	619	0.87	685	1.04	723	1.19	750	1.30	777	1.41	851	1.63	898	1.78
2608			479	0.66	521	0.78	563	0.90	605	0.90	640	1.01	701	1.18	739	1.32	766	1.43	793	1.54	859	1.77	906	1.94
2761			497	0.75	539	0.88	581	1.00	623	1.04	661	1.14	717	1.31	755	1.45	782	1.57	809	1.68	868	1.90	915	2.10
2914	473	0.74	515	0.86	557	0.98	599	1.10	641	1.17	682	1.28	732	1.45	769	1.58	796	1.69	823	1.81	877	2.04	924	2.52
3068	492	0.84	534	0.95	576	1.08	618	1.20	660	1.30	702	1.42	748	1.58	784	1.72	811	1.83	838	1.94	886	2.17	933	2.40
3221	510	0.93	552	1.06	594	1.19	636	1.30	678	1.42	723	1.57	763	1.72	794	1.84	820	1.95	846	2.07	894	2.30	941	2.55
3374	528	1.03	570	1.16	612	1.29	654	1.42	697	1.54	744	1.72	779	1.86	804	1.97	830	2.07	855	2.19	903	2.43	950	2.70
3528	550	1.20	594	1.32	640	1.43	683	1.55	721	1.71	760	1.87	790	1.99	815	2.10	840	2.21	865	2.32	914	2.59	959	2.87
3681	572	1.36	618	1.47	668	1.57	712	1.69	746	1.88	776	2.01	802	2.12	826	2.23	851	2.33	876	2.44	926	2.74	969	3.04
Standa	rd Mo	tor	3.0 H	IP Sta	ındarı	d		,																
3.0 HP	and		Mote	or and	l Field	l-Supp	olied							5 HP	Ove	rsize	d Mot	or						
Low St	atic D	rive	Low	Stati	c Driv	<i>r</i> е · ·								and	High	Stati	c Driv	/e						

- Notes:

  1. Performance based on a wet coil and 2 inch (51 mm) throwaway filters.

  2. Tabulated brake horsepower is the motor shaft output required.

  3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

#### Table PD-21 — Continued

	39		44	(Pascal) 18	
CFM	RPM	BHP	RPM	BHP	
2454	944	2.05	989	2.33	
2608	952	2.21	997	2.48	
2761	961	2.36	1006	2.64	
2914	970	2.52	1015	2.80	
3068	978	2.68	1023	2.95	
3221	941	2.55	986	2.83	
3374	994	2.99			
3528	1003	3.17			
3681	1012	3.36			

#### Table PD-22 — Blower Speeds

	Motor Sheave Iurns Open											
Drive	6	5	4	3	2	1	0					
Standard	706	732	758	784	811	837	863					
Low Static	457	478	500	521	542	563	585					
Field-Supplied Low Static	574	595	617	638	659	680	702					
High Static	N/A	821	862	903	945	986	1027					



Table PD-23 — Discharge	Plenum And Grille Assei	nblyThrow Distance	<ul> <li>Air Handler</li> </ul>
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Unit		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Louver Angle Deflection Position								
Model No.	CFM	L/S	Straight	20, Ft. (m)	40, Ft. (m)	55, Ft. (m)					
	1400	661	38 (11.6)	24 (7.3)	22 (6.7)	18 (5.5)					
	1600	755	42 (12.8)	31 (9.4)	26 (7.9)	20 (6.1)					
TWE050	1800	850	46 (14.0)	37 (11.3)	29 (8.8)	22 (6.7)					
	2000	944	48 (14.6)	43 (13.1)	33 (10.1)	24 (7.3)					
	2200	1038	51 (15.5)	50 (15.2)	36 (11.0)	25 (7.6)					
	2100	991	49 (14.9)	38 (11.6)	31 (9.4)	27 (8.2)					
	2400	1133	52 (15.9)	43 (13.1)	35 (10.7)	29 (8.8)					
	2700	1274	55 (16.8)	48 (14.6)	38 (11.6)	31 (9.4)					
TWE075	3000	1416	58 (17.7)	53 (16.2)	42 (12.8)	32 (9.8)					
	3200	1510	56 (17.1)	46 (14.0)	38 (11.6)	30 (9.1)					
	3600	1699	62 (18.9)	51 (15.5)	42 (12.8)	33 (10.1)					
	4000	1888	66 (20.1)	57 (17.4)	47 (14.3)	35 (10.7)					
	4400	2077	71 (21.6)	62 (18.9)	52 (15.9)	38 (11.6)					
TWE100	4800	2265	76 (23.2)	67 (20.4)	56 (17.1)	42 (12.8)					
	4300	2029	42 (12.8)	32 (9.8)	29 (8.8)	21 (6.4)					
	4900	2313	47 (14.3)	38 (11.6)	32 (9.8)	25 (7.6)					
	5400	2549	52 (15.9)	44 (13.4)	37 (11.3)	29 (8.8)					
TWE155	6000	2832	57 (17.4)	49 (14.9)	41 (12.5)	32 (9.8)					
	5600	2643	50 (15.2)	40 (12.2)	33 (10.1)	27 (8.2)					
	6400	3020	56 (17.1)	46 (14.0)	38 (11.6)	30 (9.1)					
	7200	3398	62 (18.9)	51 (15.5)	42 (12.8)	33 (10.1)					
TWE200	8000	3776	66 (20.1)	57 (17.4)	47 (14.3)	35 (10.7)					

Throw distance values are based on a terminal velocity of 75 FPM (0.38 m/s).

Throw distance values at other terminal velocities may be established by multiplying throw distances in table above by throw factor:

Terminal Velocity		Throw Facto
50 FPM (.25 m/s)	x	1.50
100 FPM (.51 m/s)	x	.75
150 FPM ( 76 m/s)	x	50

PD-24 — Static Pressure DropThrough Accessories — Air Handler

					Disch	narge					
Unit			Return	Grille	Plenum a	nd Grille <sup>2</sup>	Electric Heaters (Kw)				
Model No.	CFM	L/S	In. W.C. <sup>1</sup>	Pascal	In. W.C. <sup>1</sup>	Pascal	3.5-7	10-14	17-24	35	
	1400	661	.09	(22.4)	.16	(39.8)	.06	.06	.12	_	
TWE050A	1600	755	.12	(29.9)	.21	(52.3)	80	.08	.14	_	
	2000	944	.18	(44.8)	.33	(82.2)	.13	.13	.19	_	
	2100	991	.05	(12.5)	.19	(47.3)	.02	.03	.05	.08	
TWE075A	2400	1133	.08	(19.9)	.27	(67.2)	.03	.06	.08	.12	
	3000	1416	.13	(32.4)	.40	(99.6)	.06	.12	.17	.23	
TWE100A	2800	1321	.04	(10.0)	.34	(84.7)	.03	.04	.14	.20	
TWE100B	3200	1510	.07	(17.4)	.43	(107.1)	.06	.13	.19	.26	
	4300	2029	.07	(17.4)	.18	(44.8)	.02	.02	.04	.05	
	4800	2265	.09	(22.4)	.23	(57.3)	.03	.03	.06	.08	
TWE155B	6000	2832	.15	(37.4)	.34	(84.7)	.06	.06	.12	.17	
	5600	2643	.07	(17.4)	.32	(79.7)	.04	.04	.10	.15	
TWE200B	6400	3020	.11	(27.4)	.43	(107.1)	.06	.0-6	.13	.19	
	8000	3776	.17	(42.3)	.66	(164.3)	.10	.10	.20	.30	

Throw distance values are based on a terminal velocity of 75 FPM (0.38 m/s). Throw distance values at other terminal velocities may be established by multiplying throw distances in table above by throw factor:

Terminal Velocity		Throw Facto
50 FPM (.25 m/s)	x	1.50
100 FPM (.51 m/s)	х	.75
150 FPM (.76 m/s)	х	.50

Return air filter ESP included in Fan Performance Table data.
 At louver opening angle of 42° F (5.5° C). For ESP at other angle openings, see accessory Installer's Guide.



Table PD-25 —	Auxiliar	y Electric Heat Ca	apacity — Air Handler
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		No.		Stage 1			Stage 2		То	tal
Unit Model No.	Total KW	of Stages	KW Input	Btuh Output	KW Output	KW Input	Btuh Output	KW Output	Btuh Output	KW Output
TWE050, 075,100	3.47	1	3.47	11,851	3.47				11,851	3.47
	6.92	1	9.92	23,606	6.92	_	_	_	23,606	6.92
	10.39	1	10.39	35,457	10.39	_	_	_	35,457	10.39
	17.31	2	10.39	35,457	10.39	6.92	23,606	6.92	59,063	17.31
TWE075, 100A, 100	24.22	2	13.83	47,213	13.83	10.39	35,457	10.39	82,670	24.22
TWE155, 200	6.94	1	6.94	23,701	6.94	_	_	_	23,701	6.94
	13.83	1	13.83	47,213	13.83	_	_	_	47,213	13.83
	20.78	2	13.83	47,213	13.83	6.94	23,701	6.94	70,915	20.78
	34,62	2	20.78	70,915	20.78	13.84	47,213	13.89	118,128	34.61

\*Heaters are rated at 400v. For other than rated voltage, Capacity =  $\left(\frac{\text{Voltage}}{\text{Rated Voltage}}\right)^2 \times \text{Rated Capacity and KW} = \left(\frac{\text{Voltage}}{\text{Rated Voltage}}\right)^2 \times \text{Rated KW}.$ 



# Electrical Data

Table ED-1 — Electrical Characteristics — Motors — Air Handler

		Sta	Standard Fan Motor			rsized Fan M	otor
Unit		-	Amps			An	nps
Model No.	Volts	Phase	FLA	LRA	Phase	FLA	LRA
TWE050	380/415	3	1.4	8.2	3	1.8	21.6
TWE075	380/415	3	3.2	19.7	3	4.0	25.5
TWE100	380/415	3	3.6	25.5	3	5.3	37.5
TWE155	380/415	3	4.6	37.5	3	6.9	39.2
TWE200	380/415	3	7.6	39.2	3	9.0	65.1

Table ED-2 — Unit Wiring — Air Handler

Unit Model No.	Unit Operating Voltage Range	Minimum Circuit Ampacity	Maximum Fuse Size or Maximum Circuit Breaker
TWE050	380/415	2	15
TWE075	380/415	4	15
TWE100	380/415	5	15
TWE155 TWE200	380/415 380/415	6 10	15 15

Table ED-3 — Electrical Characteristics — Motors — 60 Cycle — Heat Pumps

	Compressor Motor				Condenser Fan Motor					
				Am	ips				An	nps
Unit				RLA	LRA				FLA	LRA
Model No.	No.	Volts	Phase	(Ea.)	(Ea.)	No.	Volts	Phase	(Ea.)	(Ea.)
TWA075AD	1	380/415	3	11.0	90.0	1	380/415	1	1.6	3.7
TWA100AD	1	380/415	3	14.9	118.0	1	380/415	1	2.7	7.0
TWA155BD	2	380/415	3	11.0	90.0	2	380/415	1	1.6	3.7
TWA200BD	2	380/415	3	14.9	118.0	2	380/415	1	2.7	7.0

Table ED-4 — Unit Wiring — Heat Pumps

Unit Model No.	Unit Operating Voltage Range	Minimum Circuit Ampacity	Maximum Fuse Size or Maximum Circuit Breaker
TWA075	380/415	18.0	30
TWA100	380/415	25.6	40
TWA155 TWA200	380/415 380/415	31.6 45.2	40 60



# **Electrical Data**

Table ED-5 — Unit Wiring With Electric Heat (Single Point Connection) — Air Handlers

		igio i ciiit cciiiiocii,	,		
Heater	Heater	To Use	Control	Minimum	Maximum
Model No.	KW Rating <sup>1</sup>	with Unit	Stages	Circuit Ampacity <sup>2</sup>	Fuse Breaker Size 2
BAYHTRL405A	3.47		1	9	15
BAYHTRL410A	6.92	TWE050AD	1	17	20
BAYHTRL415A	10.39		1	24	25
BAYHTRL425A	17.31		2	39	40
BAYHTRL405A	3.47		1	11	15
BAYHTRL410A	6.92		1	18	20
BAYHTRL415A	10.39	TWE075AD	1	26	30
BAYHTRL425A	17.31		2	41	45
BAYHTRL435A	24.22		2	56	60
BAYHTRL405A	3.47		1	12	15
BAYHTRL410A	6.92		1	19	25
BAYHTRL415A	10.39	TWE100AD,TWE100BD	1	27	30
BAYHTRL425A	20.78		2	42	45
BAYHTRL435A	24.22		2	57	60
BAYHTRM410A	6.94		1	21	30
BAYHTRM420A	13.83	TWE155BD	1	36	40
BAYHTRM430A	20.78		2	51	60
BAYHTRM450A	34.62		2	81	90
BAYHTRM410A	6.94		1	25	40
BAYHTRM420A	13.83	TWE200BD	1	40	50
BAYHTRM430A	20.78		2	55	60
BAYHTRM450A	34.62		2	85	90

1. KW ratings are at 400v for 3 phase, 400v air handlers

For other than rated voltage, ampacity = \( \frac{Voltage}{Rated Voltage} \) \( \times \) Rated Capacity and KW = \( \frac{Voltage}{Rated Voltage} \) \( \times \) Rated KW.

2. Any power supply and circuits must be wired and protected in accordance with local codes.

3. Field wire must be rated at least 75° C.

4. Field wire must be rated at least 90° C.



### **Jobsite Connections**

Wiring shown with dashed lines is to be furnished and installed by the customer. All customer-supplied wiring must be copper only and must conform to NEC and local electrical codes. Codes may require line of sight between disconnect switch and unit.

#### NOTE:

1. When electric heater accessory is used single point power entry or dual point power entry is field optional. Single point power entry option is through electric heater only.

#### TWA050/TWE050

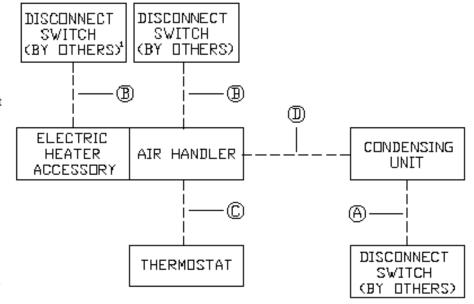
#### Field Wiring:

- 3 power wires. Line voltage.
- В 3 power wires. Line voltage.
- С - Heat pump thermostat: 6 wires, 24 volts.
  - Electric heat: add 2 additional wires, 24 volts.
- D 2 wires, 24 volts.
  - Outdoor thermostat: add 1 additional wire per ODT, 24 volts.
  - Electric heat: add 1 additional wire, 24 volts.

#### (2)TWA050/TWE100B

#### Field Wiring:

- 3 power wires. Line voltage.3 power wires. Line voltage.
- В
- С Heat pump thermostat: 7 wires, 24 volts Electric Heat: add 2 additional wires, 24 volts.
- 5 wires, 24 volts to outdoor D section "A" 2 wires, 24 volts to outdoor section "B" 2 wires, 24 volts between outdoor sections "A" "B"
  - Electric heat: add 1 additional wire, 24 volts.
  - Outdoor thermostat: add 1 additional wire, 24 volt.



#### TWA075A/TWE075A; **TWA100A/TWE100A**

#### Field Wiring:

В

- 3 power wires, line voltage.
  - 3 power wires, line voltage.
- С Heat pump thermostat: 6 wires, 24 volts.
  - Electric heat: add 2 additional wires, 24 volts.
- 6 wires, 24 volts.
  - Outdoor thermostat: add 1 additional wire, 24 volts.
  - Electric heat: add 1 additional wire, 24 volts.

#### (2)TWA075A/TWE155B; (2)TWA100A/TWE200B

#### Field Wiring:

- 3 power wires, line voltage.
- В 3 power wires, line voltage.
- С Heat pump thermostat: 7 wires, 24 volts.
  - Electric heat: add 2 additional wires, 24 volts.

- 9 wires, 24 volts.
  - Electric heat: add 4 additional wires, 24 volts.
  - Outdoor thermostat: add 3 additional wires, 24 volts.

#### TWA155B/TWE155B; TWA200B/TWE200B

#### Field Wiring:

- 3 power wires, line voltage.
- R 3 power wires, line voltage.
- C Heat pump thermostat: 7 wires, 24 volts.
  - Electric heat: add 2 additional wires, 24 volts.
- D 7 wires, 24 volts.
  - Electric heat: add 4 additional wires, 24 volts.
  - Outdoor thermostat: add 1 additional wire, 24 volts.

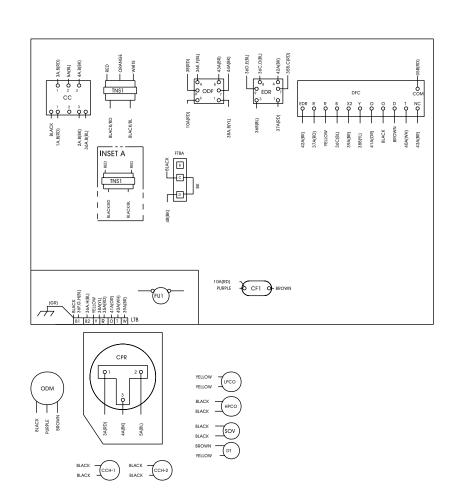


# **Typical** Wiring

### (Heat Pump)

#### Heat Pump - Single Compressor

Typical unit wiring diagram. For specific wiring, see individual Service Facts.



#### NOTES:

- 1. LOW VOLTAGE WIRING MUST BE 18 AWG MIN.

  2. MAX. EXTERNAL IOW VOLTAGE LOAD 1.8 AMPS 24 V.A.C. DOES NOT MICKUDE ACCESSITIES MID OSE RICULDE INDOOR BLOWER RELAY.

  3. SEE WIRING DIAGRAM WITH HEATER FOR DETAILS OF HEATER WIRING.

  4. CONNECTIONS SHOWN ARE FOR 2007/66/06/25/H. WHEN 2009/66/07/29H OPERATION.
- 1.5 MEGISTED.

  1.6 ME

- 6. CONNECTIONS FOR THE 230V/3PH/60HZ UNIT ARE SHOWN. FOR 400V, 460V, AND 575V UNITS SEE TRANSFORMER CONNECTIONS IN INSETS A AND B.

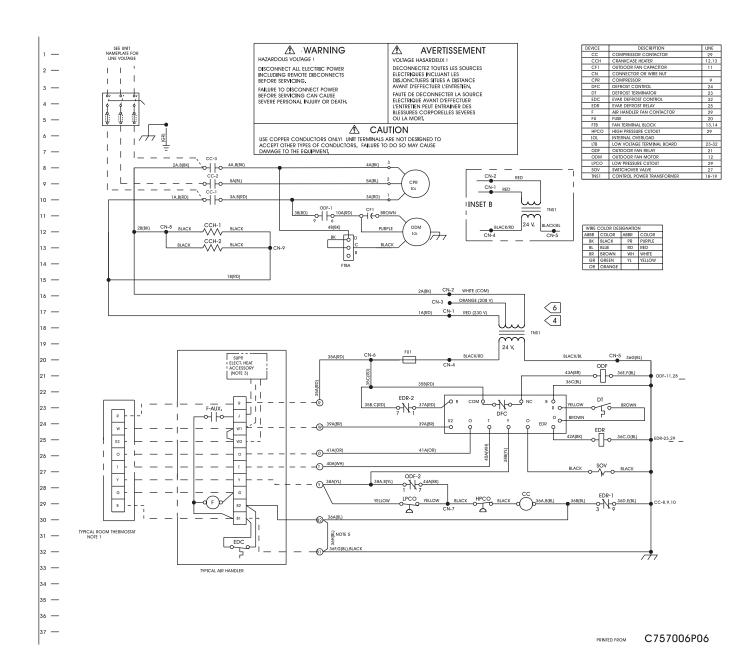
C757006P06

TWA090A3 TWA090A4 TWA090AW TWA120A4 TWA120AW TWA075AD TWA100AD



# Typical Wiring

(Heat Pump)



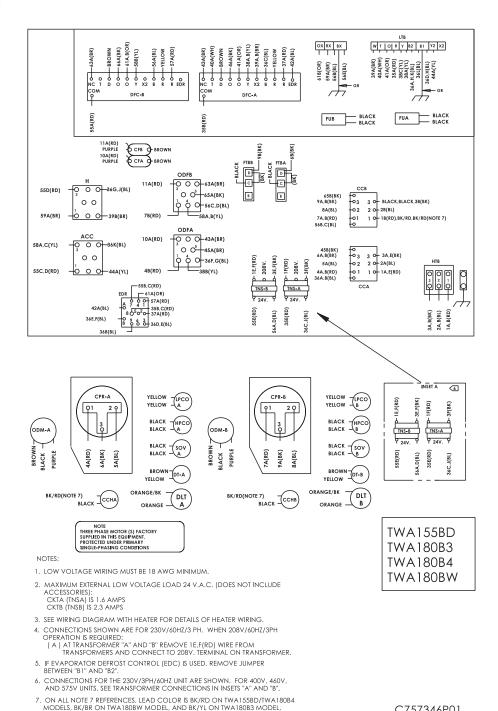


# **Typical** Wiring

### (Heat Pump)

#### Heat Pump - Dual Compressors

Typical unit wiring diagram. For specific wiring, see individual Service Facts.

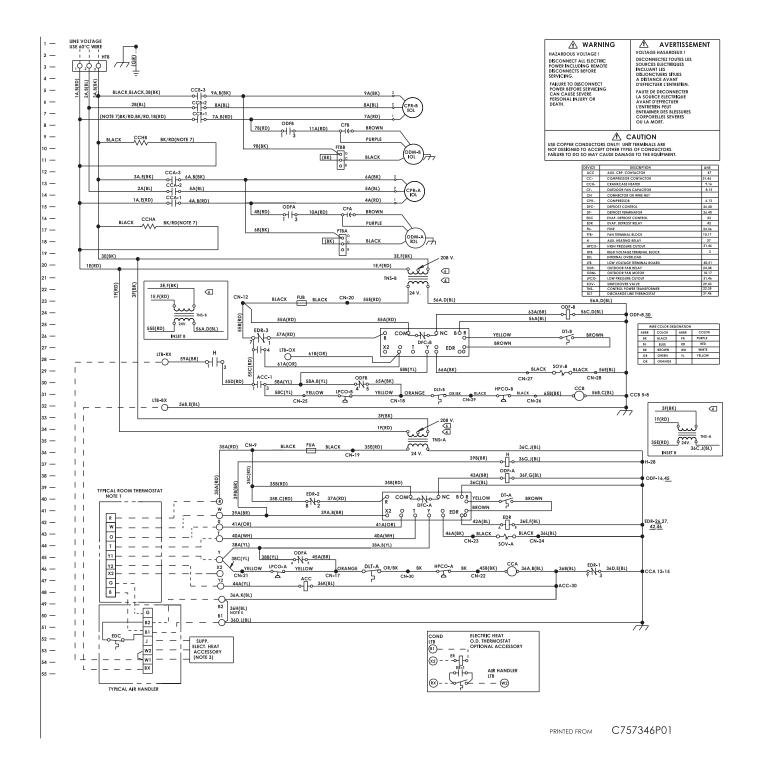


C757346P01



# Typical Wiring

## (Heat Pump)



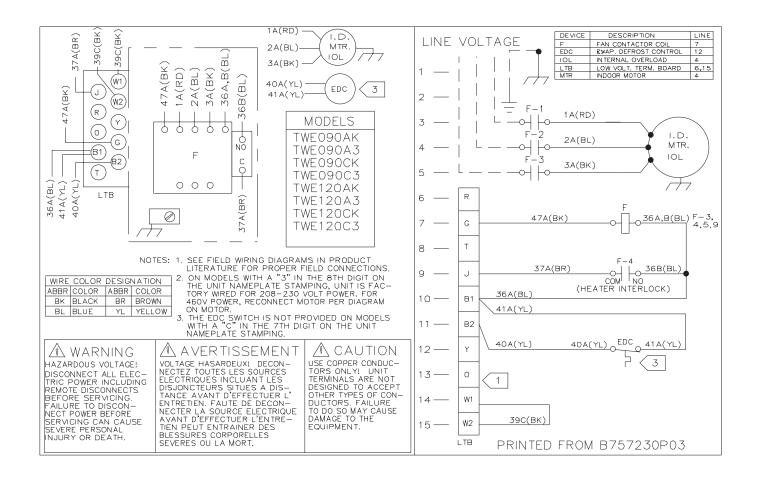


# Typical Wiring

(Air Handler)

### Air Handler

Typical unit wiring diagram. For specific wiring, see individual Service Facts.

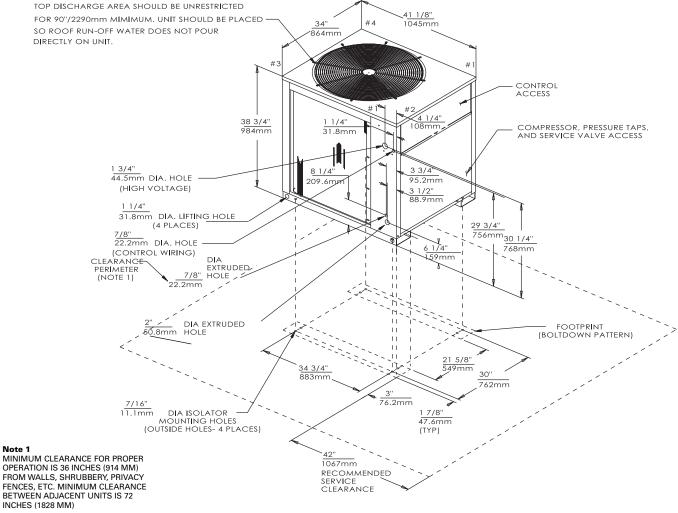




(Heat Pump)

Figure DD-1 — TWA075 Heat Pump

All dimensions are in inches and millimeters.



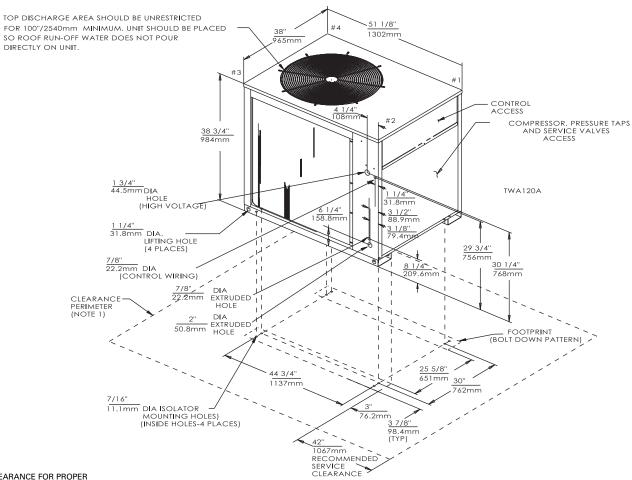
OPERATION IS 36 INCHES (914 MM) FROM WALLS, SHRUBBERY, PRIVACY FENCES, ETC. MINIMUM CLEARANCE



(Heat Pump)

Figure DD-2 — 10 Ton TWA 100A Heat Pump

All dimensions are in inches and millimeters.



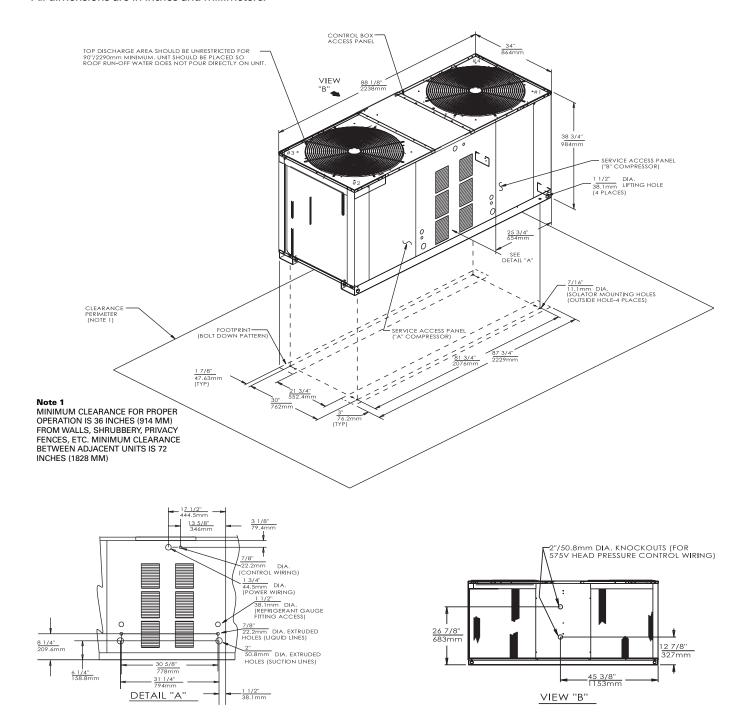
#### Note 1 MINIMUM CLEARANCE FOR PROPER OPERATION IS 36 INCHES (914 MM) FROM WALLS, SHRUBBERY, PRIVACY FENCES, ETC. MINIMUM CLEARANCE BETWEEN ADJACENT UNITS IS 72 INCHES (1828 MM)



(Heat Pump)

Figure DD-3 — TWA155B Heat Pump

All dimensions are in inches and millimeters.

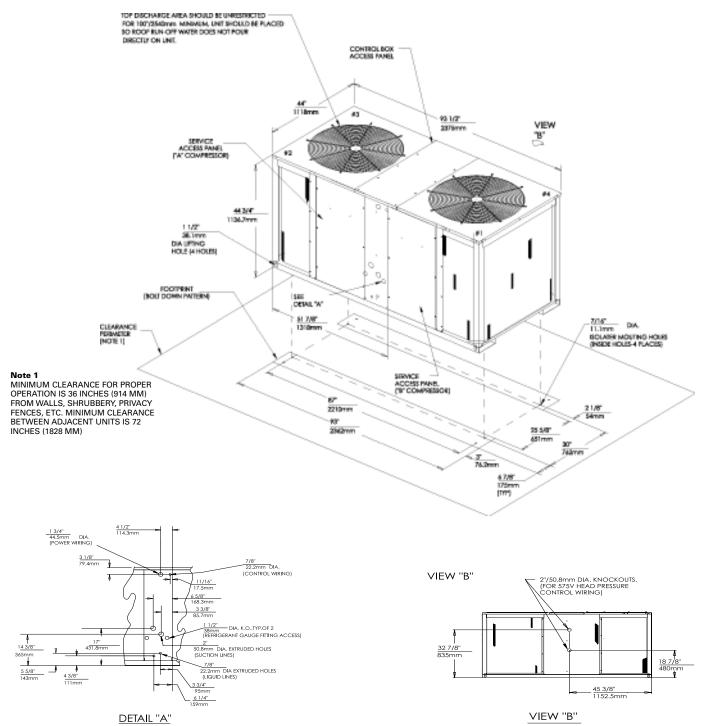




(Heat Pump)

Figure DD-4 — TWA200B Heat Pump

All dimensions are in inches and millimeters.

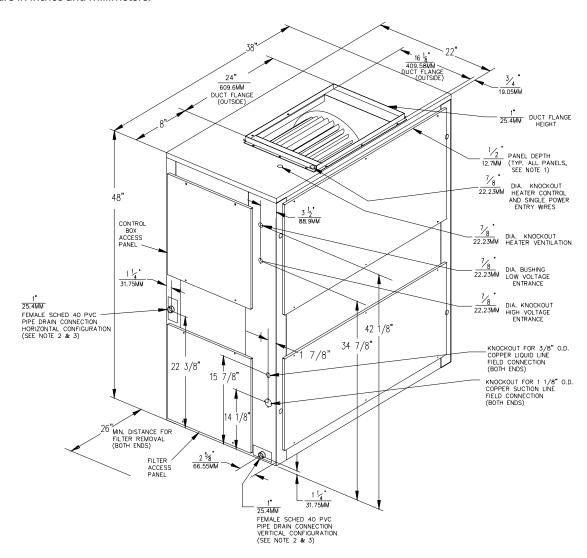




(Air Handler)

Figure DD-5 — TWE050A Air Handlers

All dimensions are in inches and millimeters.



### Notes:

- 1. Length, Width, and Height Dimensions do not include 1/2" (12.7mm) access panel depth.

  2. Removable drain pan and attached drain connection may be
- installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.

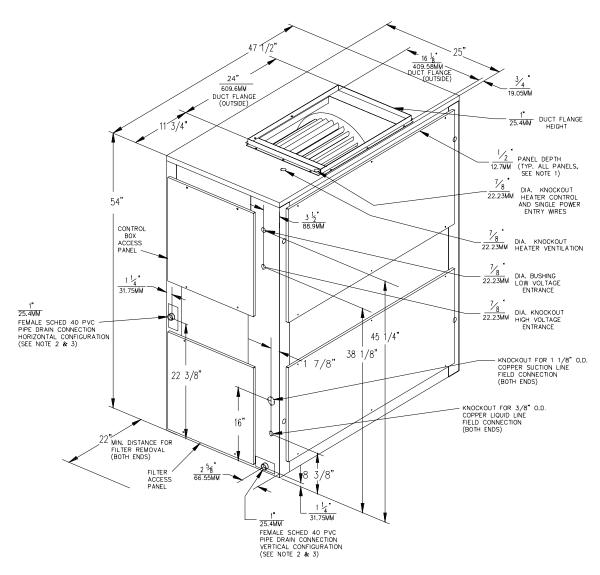
  3. If periodic drain pan cleaning is required, allow room for partial
- removal of pan on drain connection end of unit.



(Air Handler)

Figure DD-6 - TWE075A Air Handler

All dimensions are in inches and millimeters.



### Notes:

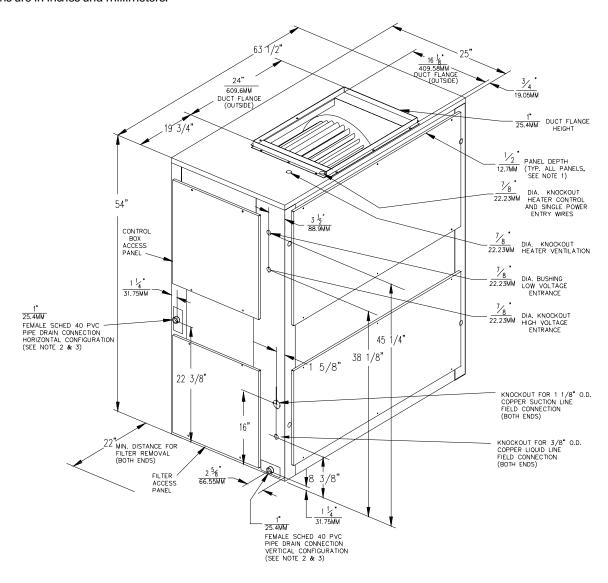
- Length, Width, and Height Dimensions do not include 1/2" (12.7mm) access panel depth.
- Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.
- If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.



(Air Handler)

Figure DD-7 — TWE100A Air Handler

All dimensions are in inches and millimeters.



### Notes:

- 1. Length, Width, and Height Dimensions do not include 1/2"
- (12.7mm) access panel depth.

  2. Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit
- pan back into unit.

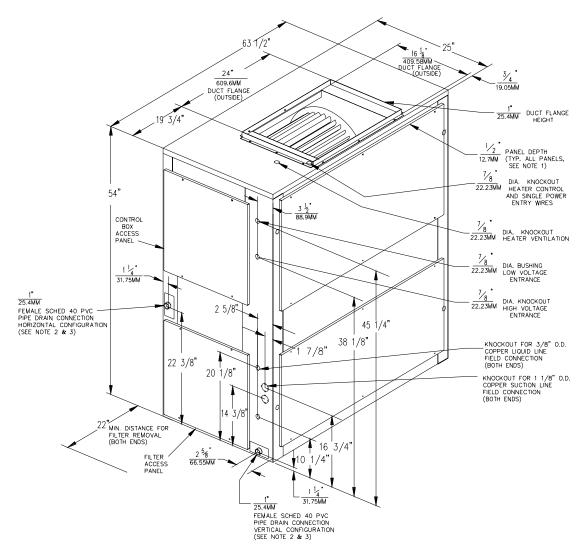
  3. If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.



(Air Handler)

Figure DD-8 — TWE100B Air Handler

All dimensions are in inches and millimeters.



### Notes:

- 1. Length, Width, and Height Dimensions do not include 1/2"
- (12.7mm) access panel depth.

  2. Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.

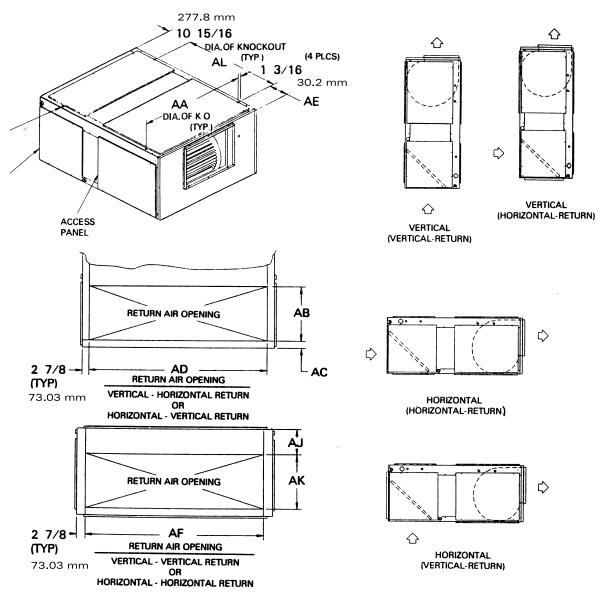
  3. If periodic drain pan cleaning is required, allow room for partial
- removal of pan on drain connection end of unit.



(Air Handlers)

Figure DD-9 — TWE050A, 075A, 100A and TWE100B Air Handler

All dimensions are in inches and millimeters.



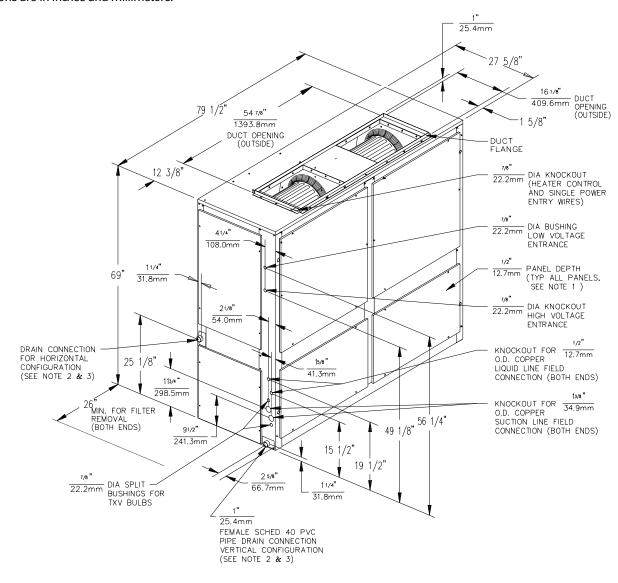
Model No.	AA	AB	AC	AD	AE	AF	AJ	AK	AL
TWE050A	35 <sup>5</sup> / <sub>8</sub> (905)	12 <sup>1</sup> / <sub>16</sub> (306.4)	1 <sup>5</sup> / <sub>8</sub> (41.3)	32 <sup>1</sup> / <sub>4</sub> (819.2)	2 <sup>15</sup> / <sub>16</sub> (74.6)	32 <sup>1</sup> / <sub>4</sub> (819.2)	7 <sup>13</sup> / <sub>16</sub> (198.4)	12 <sup>3</sup> / <sub>8</sub> (314.3)	34 <sup>9</sup> / <sub>16</sub> (878)
TWE075A	45 1/8	16	1 11/16	41 15/16	6 5/8	41 3/4	7	16	36 <sup>7</sup> /8
111207071	(1146.2)	(406.4)	(42.9)	(1065.2)	(168.3)	(1060.5)	(177.8)	(406.4)	(936.6)
TWE100A	61 <sup>1</sup> / <sub>8</sub> (1552.6)	16 (406.4)	1 <sup>11</sup> / <sub>16</sub> (42.9)	57 <sup>15</sup> / <sub>16</sub> (1471.6)	6 <sup>5</sup> / <sub>8</sub> (168.3)	57 <sup>13</sup> / <sub>16</sub> (1468.4)	7 (177.8)	16 (406.4)	36 <sup>7</sup> / <sub>8</sub> (936.6)
TWE100B	61 <sup>1</sup> / <sub>8</sub> (1552.6)	16 (406.4)	1 <sup>11</sup> / <sub>16</sub> (42.9)	57 <sup>15</sup> / <sub>16</sub> (1471.6)	6 <sup>5</sup> / <sub>8</sub> (168.3)	57 <sup>13</sup> / <sub>16</sub> (1468.4)	7 (177.8)	16 (406.4)	36 <sup>7</sup> / <sub>8</sub> (936.6)



(Air Handler)

Figure DD-10 — TWE155B Air Handler

All dimensions are in inches and millimeters.



### Notes:

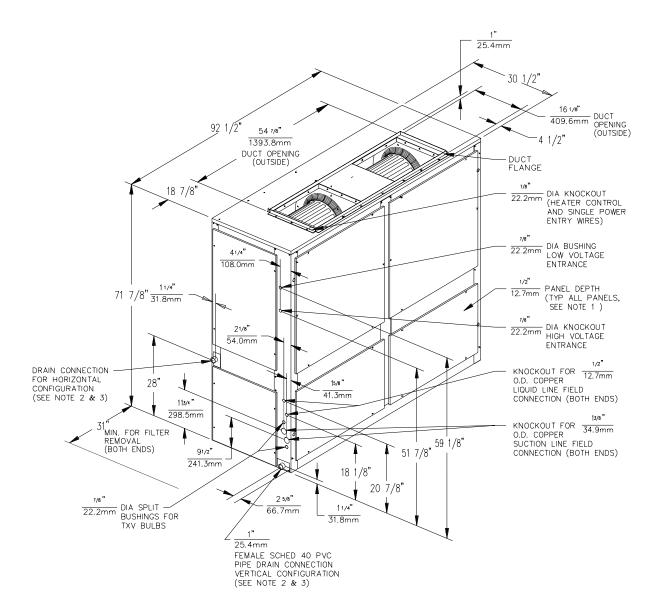
- Length, Width, and Height Dimensions do not include 1/2" (12.7mm) access panel depth.
- Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.
- If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.



(Air Handlers)

Figure DD-11 - TWE200B Air Handler

All dimensions are in inches and millimeters.



### Notes

- Length, Width, and Height Dimensions do not include 1/2" (12.7mm) access panel depth.
- Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.
- 3. If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.



(Air Handlers)

Figure DD-12 - TWE155B and 200B Air Handlers

All dimensions are in inches and millimeters.

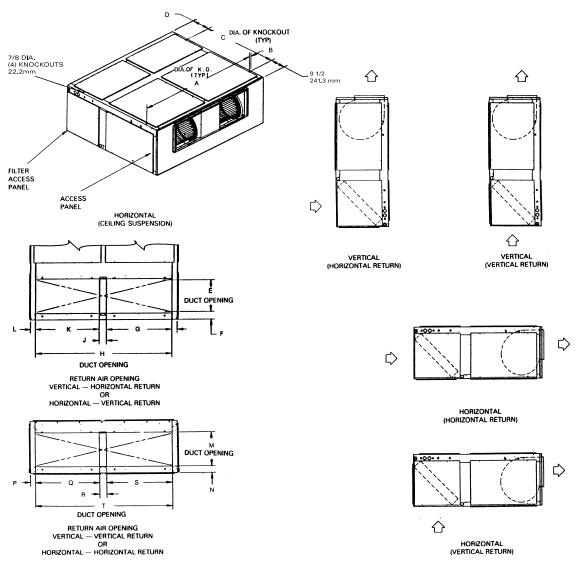


Table DD-2 — Air Handler Dimensions — in. (mm)

Model No.	Α	В	С	D	Е	F	G	Н	J
TWE155B	77 1/4 (1962.2)	1 3/16 (30.2)	48 (1219.2)	11 <sup>7</sup> / <sub>16</sub> (290.5)	18 (457.2)	3 3/8 (85.7)	35 1/16 (890.6)	73 7/8 (1876.4)	3 3/4 (95.3)
TWE200B	89 1/4 (2267)	1 11/16 (42.9)	50 13/16 (1290.6)	11 <sup>1</sup> / <sub>2</sub> (292.1)	20 1/8 (511.2)	3 1/16 (77.8)	39 1/8 (993.8)	82 7/8 (2105)	4 <sup>9</sup> / <sub>16</sub> (115.9)

Table DD-2— Air Handler Dimensions — in. (mm) (Continued)

Model No.	K	L	M	N	Р	Q	R	S	Т
TWE155B	35 1/16 (890.6)	2 13/16 (71.4)	18 (457.2)	3 9/16 (90.5)	2 7/8 (73)	35 <sup>1</sup> / <sub>16</sub> (890.6)	3 3/4 (95.3)	35 1/16 (890.6)	73 3/8 (1863.7)
TWE200B	39 <sup>1</sup> / <sub>8</sub> (993.8)	4 7/8 (123.8)	20 (508)	3 (76.2)	4 <sup>13</sup> / <sub>16</sub> (122.2)	39 1/8 (993.8)	4 <sup>9</sup> /16 (115.9)	39 1/8 (993.8)	82 <sup>7</sup> / <sub>8</sub> (2105)



(Accessories)

Figure DD-13 — Electric Heater for TWE050, 075, 100 Air Handlers

All dimensions are in inches and millimeters.

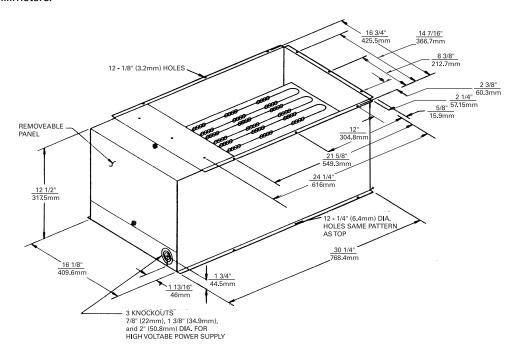
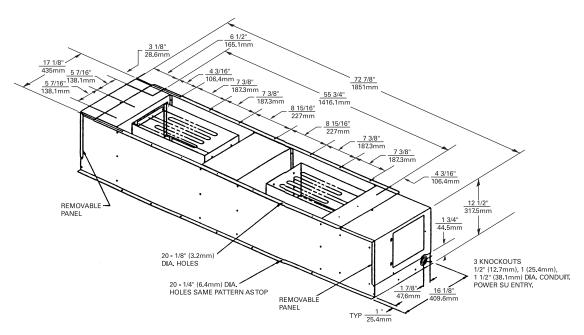


Figure DD-14 — Electric Heater for TWE155 and 200 Air Handlers





(Accessories)

Table DD-3 — Discharge Plenum And Grille

Dimensions — in. (mm)										
Model	Model No.	Α	В	С						
TWE050	BAYPLNM015	37 <sup>15</sup> / <sub>16</sub> (963.6)		28 (711.2)						
TWE075	BAYPLNM016	47 <sup>1</sup> / <sub>2</sub> (1206.5)	25 (635)	28 (711.2)						
TWE100	BAYPLNM017	63 <sup>1</sup> / <sub>2</sub> (1612.9)	25 (635)	28 (711.2)						

Table DD-4 — Discharge Plenum And Grille Dimensions — in. (mm)

For Use with Electric Heat										
Model	Model No.	Α	В	С						
TWE050	BAYPLNM025	3715/16	2115/16	29						
		(963.6)	(557.2)	(736.6)						
TWE075	BAYPLNM026	$47^{1}/_{2}$	25	29						
		(1206.5)	(635)	(736.6)						
TWE100	BAYPLNM027	63 <sup>1</sup> / <sub>2</sub>	25	29						
		(1612.9)	(635)	(736.6)						
TWE155	BAYPLNM028	79 <sup>1</sup> / <sub>2</sub>	2711/16	35						
		(2019.3)	(703.3)	(889)						
TWE200	BAYPLNM029	92 <sup>1</sup> / <sub>2</sub>	$30^{7}/_{16}$	35						
		(2349.5)	(773.1)	(889)						

## **Figure DD-15** — **Discharge Plenum and Grille** All dimensions are in inches and millimeters.

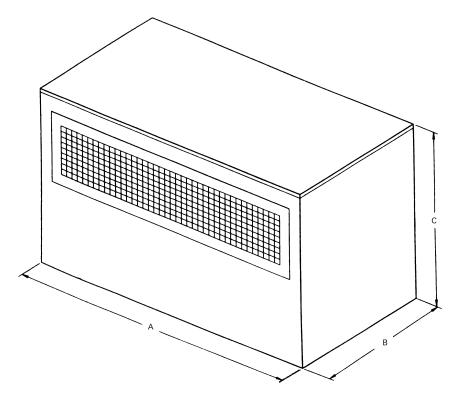
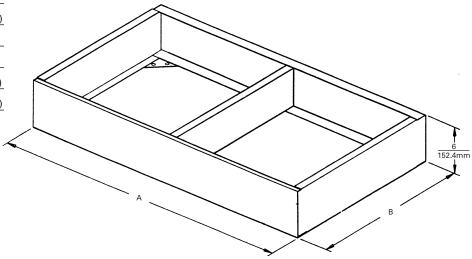


Table DD-5 — Subbase Dimensions — in

iable DD-5 — Subbase Dimensions — In.									
(mm)									
Model	Model No.	Α	В						
TWE050	BAYBASE001	38 (965.2)	22 (558.8)						
TWE075	BAYBASE002	47 <sup>1</sup> / <sub>2</sub> (1206.5)	25 (635)						
TWE100	BAYBASE003	63 <sup>1</sup> / <sub>2</sub> (1612.9)	25 (635)						
TWE155	BAYBASE004	79 <sup>1</sup> / <sub>2</sub> (2019.3)	27 <sup>5</sup> / <sub>8</sub> (701.7)						
TWE200	BAYBASE005	92 <sup>1</sup> / <sub>2</sub> (2349.5)	30 <sup>7</sup> / <sub>16</sub> (773.1)						

Figure DD-16 — Subbase





## Weights

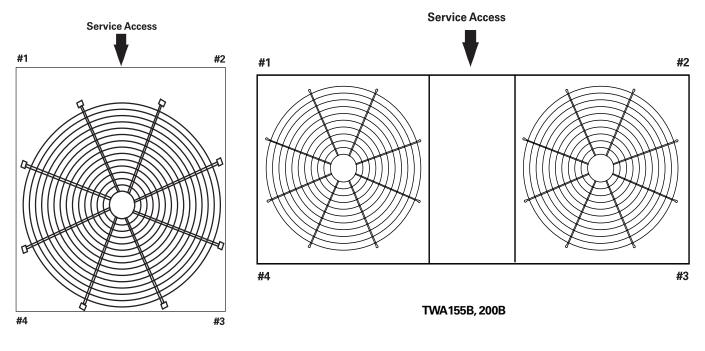
(Heat Pumps)

Table W-1 — Unit and Corner Weights — Lbs (Kg)

Unit	Shipping	Net				
Model No.	Maximum — Ibs (Kg)	Maximum — lbs (Kg)	1	2	3	4
TWA075A	390	343	112	89	63	79
	(176.9)	(155.6)	(50.8)	(40.4)	(28.6)	(35.8)
TWA100A	468	414	146	106	68	94
	(212.3)	(187.8)	(66.2)	(48.1)	(30.1)	(42.6)
TWA155B	816	740	195	186	175	184
	(370.1)	(335.7)	(88.5)	(84.4)	(79.4)	(83.5)
TWA200B	970	885	253	250	190	192
	(440.0)	(401.4)	(114.8)	(113.4)	(86.2)	(87.1)

Table W-2 — Accessory Weights — Net Lbs (Kg)

IGNIO II E	, 10000001 , 11	0.9				
Unit	RIS	Steel Spring	Anti Short	Coil		Low
Model No.	Isolators	Isolators	CycleTimer	Guard	Thermostats	Ambient
TWA075A	2	12	1	8	1	23
	(.9)	(5.4)	(.5)	(3.6)	(.5)	(10.4)
TWA100A	2	12	1	11	1	23
	(.9)	(5.4)	(.5)	(5)	(.5)	(10.4)
TWA155B	2	12	1	22	1	23
	(.9)	(5.4)	(.5)	(10)	(.5)	(10.4)
TWA200B	2	12	1	34	1	23
	(.9)	(5.4)	(.5)	(15.4)	(.5)	(10.4)



TWA075A, 100A



## Weights

(Air Handlers)

Table W-3 — Air Handlers, Coils, And Corner Weights — Lbs (Kg)1

IUDIC TT O	All Hullaidid, odlic	, mila comici troigi	110	\!\\g/						
Unit	Shipping	Net	Corner Weights — Vertical Corner Weights — H					s — Horizontal		
Model No.	Maximum (lbs)	Maximum (lbs)	#1	#2	#3	#4	Α	В	С	D
TWE050	298	262	59	59	59	59	54	64	64	54
	(135)	(118.9)	(26.8)	(26.8)	(26.8)	(26.8)	(24.5)	(29)	(29.03)	(24.5)
TWE075	388	346	79	79	79	79	77	84	81	73
	(176)	(157)	(35.9)	(35.9)	(35.9)	(35.9)	(35)	(38.1)	(36.7)	(33.1)
TWE100	473	419	107	107	107	107	102	113	113	102
	(214.6)	(190.1)	(48.5)	(48.5)	(48.5)	(48.5)	(46.3)	(51.3)	(51.3)	(46.3)
TWE125	754	690	173	173	173	173	174	156	190	170
	(342)	(313)	(78.5)	(78.5)	(78.5)	(78.5)	(79)	(70.8)	(86.2)	(77.1)
TWE200	886	820	204	204	204	204	185	228	221	179
	(401.9)	(372)	(92.5)	(92.5)	(92.5)	(92.5)	(84)	(103.4)	(100.3)	(81.2)

Note:

If application requires steam or hot water heating coils, field supplied isolators must be utilized.

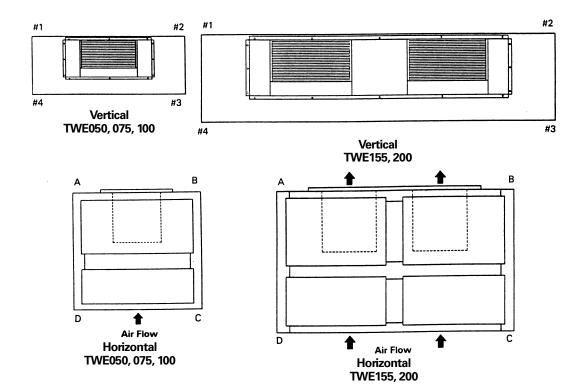


Table W-4 — Accessory Weights — Lbs (Kg)

	Discharge	Discharge		Electric			RIS Isolator	RIS Isolator	Steel Spring Isolator	Steel Spring Isolator
Unit	Plenum	Plenum	Return	Heat		Oversized	Floor	Suspended	Floor	Suspended
Model No.	And Grille <sup>1</sup>	And Grill <sup>2</sup>	Air Grille	Min. Max.	Subbase	Motor	Mount	Mount	Mount	Mount
TWE050	58	93	3	32/43	14	31	2	9	12	6
	(26.3)	(42.2)	(1.4)	(14.5/19.5)	(6.4)	(14.1)	(.9)	(4)	(5.4)	(2.7)
TWE075	73	123	5	27/45	19	48	2	6	12	6
	(33.1)	(55.8)	(2.3)	(12.3/20.4)	(8.6)	(21.8)	(.9)	(2.7)	(5.4)	(2.7)
TWE100	92	156	7	27/45	23	50	2	7	12	6
	(41.7)	(70.8)	(3.2)	(12.3/20.4)	(10.4)	(22.7)	(.9)	(3.2)	(5.4)	(2.7)
TWE155	124	230	10	79/100	27	80	2	7	12	6
	(56.3)	(104.3)	(4.5)	(35.8/45.4)	(12.3)	(36.3)	(.9)	(3.2)	(5.4)	(2.7)
TWE200	145	264	12	79/100	31	88	2	9	12	6
	(65.8)	(119.8)	(5.4)	(35.8/45.4)	(14.06)	(40)	(.9)	(4)	(5.4)	(2.7)

Note:

54

For use when no heat is supplied. For use with electric heat.



# Mechanical Specifications

## **Heat Pumps**

### General

Unit shall be assembled on heavy gauge steel mounting/lifting rails and shall be weather proofed. Unit shall include a hermetic scroll or reciprocating compressor(s), plate fin condenser coil, fans and motors, controls, and holding charge of nitrogen. Operating Range shall be between 115° F and 35° F in cooling as standard from factory. Unit shall be UL 1995 listed and rated in accordance with ARI Standard 210/240 or 340/360.

## Casing

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 500 hours in salt spray test. Unit shall have removable end panels which allow access to all major components and controls.

## Refrigeration System — Single Compressor

TWA075A, TWA100A units shall have a single refrigeration circuit. Each refrigeration circuit has an integral subcooling circuit. A refrigeration filter drier, expansion valve, and check valves shall be provided as standard. The unit shall have both a liquid line and suction gas line service valve with gauge port.

Unit shall have one direct drive, Trane hermetic scroll compressor with centrifugal oil pump providing positive lubrication to moving parts. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Crankcase heater, discharge line thermostat, internal temperature, and current-sensitive motor overloads shall be included for maximum protection. Scroll type compressor shall provide inherently low vibration and noise by having no suction and discharge valves. External high and low pressure cutout devices shall be provided. Evaporator defrost control provided in indoor blower coil unit shall prevent compressor slugging by temporarily interrupting compressor operation when

low evaporator coil temperatures are encountered.

## Refrigeration System — Dual Compressor

TWA155B, TWA200B units shall have two separate and independent refrigeration circuits. Each refrigeration circuit shall have an integral subcooling circuit. A refrigeration filter drier shall be provided as standard. Unit shall have both a liquid line and suction gas line service valve with gauge ports.

Unit shall have two Trane direct drive, hermetic scroll compressors with centrifugal oil pump and provide positive lubrication to all moving parts. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Crankcase heater, discharge line thermostat, internal temperature, and current-sensitive motor overloads shall be included for maximum protection. Scroll type compressor shall provide inherently low vibration and noise by having no suction and discharge valves. External high and low pressure cutout devices shall be provided. Evaporator defrost control provided in indoor blower coil shall prevent compressor slugging by temporarily interrupting compressor operation when low evaporator coil temperatures are encountered.

### **Condenser Coil**

Coils shall be internally finned or smooth bore, 3/8" (10mm) copper tubes mechanically bonded to a configured aluminum plate fin as standard. Coil shall be factory pressure and leak tested to 420 psig (2,930 kPa) air pressure. Metal grilles with PVC coating for coil protection is optional.

## Condenser Fan And Motor(s)

Direct-drive, statically and dynamically balanced, 26 or 28 inch (660 or 711 mm) propeller fan(s) with aluminum blades and electro-coated steel hubs shall be used in draw-through vertical discharge position. Either permanently lubricated totally enclosed or open construction type motors shall be provided and shall have built-in current and thermal overload protection. Motor(s) shall have either ball or sleeve bearing type.

### **Controls**

Heat pump units shall be completely factory wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Control wiring shall be 24-volt control circuit which includes fusing and control transformer. Units shall provide external location for mounting a fused disconnect device. Time delay timers to prevent compressors in dual compressor units from simultaneous start-up and antirecycle timers are available as optional accessories.

### **Defrost Controls**

Electronic timed initiated, temperature terminated defrost system with choice of 50, 70, or 90 minute cycle shall be included. Timed override limits defrost cycle to 10 minutes.

## **Low Ambient Operation**

Standard units shall start and operate to approximately 35° F (1.7° C) when matched with Trane air handlers and coils. Optional head pressure control accessory permits operation to 0° F (-17.8° C).

### **ACCESSORIES**

Low Ambient Head Pressure Control — This accessory shall modulate the RPM of unit outdoor fan motor in response to outdoor ambient temperatures and liquid line temperature. Accessory provides unit cooling operation to outdoor temperatures of 0° F (-17.8° C).

Vibration Isolation Packages —This accessory shall reduce transmission of noise and vibration to building structures, equipment, and adjacent spaces. Packages shall be available in either neoprene-in-shear or spring-flex types.

Time Delay Relay — This accessory shall prevent compressors in dual compressor unit from coming on line simultaneously. Timer shall be 24-volt, 60 cycle, with four minute timing period.

Anti-Short-Cycle Timer — This accessory shall prevent rapid on-off compressor cycling in light load conditions by not allowing compressor to operate for 5-7 minutes upon shutdown. This accessory shall consist of a 24-volt, 60 cycle, solid state timing device with either 5 or 7 minute fixed-off timing period.

TWA-PRC001-EN off timing period. 55



## Mechanical Specifications

**Condenser Coil Guard** — Metal grille with PVC coating shall be provided to alleviate coil damage.

Black Epoxy Coated Condenser Coil — This factory installed option is designed to provide corrosion protection of air cooled condenser coils for seacoast application. The black epoxy coil protection is a factory applied thermoset vinyl coating, bonded to normal aluminum fin stock. The uniform thickness of the bonded vinyl layer exhibits excellent corrosion protection in salt spray tests performed in accordance with ASTM B177.

## **Air Handlers**

#### General

Air handler units shall be completely factory assembled including coil, condensate drain pan, fan motor(s), filters, and controls in an insulated casing that can be applied in either vertical or horizontal configuration. Unit shall be rated and tested in accordance with ARI standard 210/240 or 340/360. Unit shall be UL listed and labeled in accordance with UL 1995 for indoor blower coil units.

## Casing

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Casing shall be completely insulated with cleanable, foil faced, fire-retardant, permanent, odorless, glass fiber material. All insulation edges shall be either captured or sealed. Knockouts shall be provided for unit electrical power and refrigerant piping connections. Captive screws shall be standard on all access panels.

## **Refrigeration System**

The TWE050A, TWE075A, TWE100A units shall have a single refrigeration circuit and the TWE100B, TWE155B, TWE200B units shall have dual refrigeration circuits. Each refrigeration circuit is controlled by a factory installed thermal expansion valve.

## **Evaporator Coil**

Configured aluminum fin surface shall be mechanically bonded to 3/8" (10 mm)

internally enhanced copper tubing and shall be factory pressure and leak tested at 375 psig (2586 kPa). Coil is arranged for draw-through airflow and shall provide a double sloped condensate drain pan constructed of PVC plastic. The drain pan shall be removable for cleaning. The condensate drain pan can be installed in any of four positions allowing for vertical or horizontal application and providing external connections on either side of the unit.

## **Evaporator Fan**

Double inlet, double width, forward curved, centrifugal-type fan(s) with adjustable belt drive shall be standard. Thermal overload protection shall be standard on motor. Fan and motor bearings shall be permanently lubricated. Oversized motors shall be available as an option for high static application. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT)

## Controls

Magnetic evaporator fan contactor, low voltage terminal strip, check valve(s), and single point power entry shall be included. All necessary controls shall be factory-installed and wired. Evaporator defrost control shall be included to prevent compressor slugging by temporarily interrupting compressor operation when low evaporator coil temperatures are encountered.

## **Filters**

One inch, throw-away filters shall be standard on TWE050A, TWE075A, TWE100A and TWE120B model air handlers. Filters shall be accessible from the side coil access panel. Filter rack can be field converted to two inch capability. Two inch, throw-away filters shall be standard on TWE155B and TWE200B models.

## **ACCESSORIES**

Electric Heaters — UL and CSA approved electric heat modules shall be available for installation directly on fan discharge. Electric heaters shall be available in a wide range of capacities with one or two stage control, single-point electric power connection, and terminal strip connections. Electric heater elements shall be constructed of heavy-duty nickel chromium elements

internally wye connected on 400 volt, three phase. Each 400 volt heater shall have automatic line break high limit controls.

### Discharge Plenums and Grilles —

Accessory discharge plenums shall be available for vertical, free discharge applications. Plenums shall be constructed of heavy-gauge, zinc coated, galvanized steel finished with baked enamel to match the air handler unit. Grilles shall be satin finished aluminum and have four-way adjustable louvers.

**Return Air Grilles** — Accessory return air grille shall be provided for vertical front, free return applications. Grilles shall be installed in place of the front lower side panel. Grille shall be satin finished aluminum with non-adjustable louvers.

Mounting Subbase — The accessory shall be available for vertical floor mount configurations. Subbase shall be constructed of heavy gauge, zinc coated, galvanized steel with baked enamel finish to match air handler unit. Subbase is required in the vertical air flow application for condensate drain trapping and when isolators are required.

Vibration Isolators — This accessory shall reduce transmission of noise and vibration to building structures, equipment, and adjacent spaces. Packages shall be available in either neoprene-in shear or spring-flex types in floor or suspended mountings.

**Oversized Motors** — Field installed oversized motors shall be available for high static pressure applications.

## **CONTROL OPTIONS**

Standard Indoor Thermostats — Two stage heating and cooling operation or one stage heating and cooling thermostats shall be available in either manual or automatic changeover.

Programmable Electronic Night Setback Thermostat — The option shall provide heating setback and cooling setup with 7-day programming capability.

**OutdoorThermostat** — This option shall provide staging control of electric heaters based on a set outdoor temperature.



## The Trane Company

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